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MINUTES OF ECRC EXECUTIVE COMMITTEE

The Executive Committee of the Engineering College Research Council met on Wednesday, October 23, 1957, concurrent with the meetings of the ECPD and the EJC. Two major problem areas were reviewed by the members present. There was considerable planning for the program that is to be presented at the Annual Meeting of the ASEE. It was tentatively agreed that there would be four sessions held under the auspices of the ECRC or jointly with other groups within the ASEE. These sessions are: the Closed Session dealing with administration problems to be held on Tuesday afternoon, a General Session keynoted by a report on the Survey of Research Capabilities of Engineering Colleges to be held Wednesday morning, a Joint Session with Relations With Industry Division of the ASEE for Wednesday afternoon, and a Joint ECAC and ECRC Session for Thursday afternoon.

There was also some discussion as to the nature of the 1959 program which is to be held in Pittsburgh. It was proposed that for this meeting, the sessions be held insofar as possible at the Research Laboratories of the various institutions in Pittsburgh, who are acting as co-sponsors with the universities.

The other major area of discussion revolved around the effect of the Government cut-backs on research and development in the field of engineering education. It was the consensus of the majority that research in the United States in the engineering schools has been seriously set back. It was also the sense of the group that the Government should be so advised by all possible engineering groups concerned with this problem. Mr. Woodrow's letter to Dr. Paul D. Foote, Assistant Secretary of Defense, stressing the gravity of the situation was approved. It was also approved that the Chairman, through the ASEE, recommend to the Engineers Joint Council that it transmit to the Government a statement to a similar effect.

USE OF DIRECTORY DATA

Use of information obtained from this Directory for mailing of advertising literature and other purposes not related to the activities of the Society is prohibited without the special approval of the Executive Board of the American Society for Engineering Education. Inquiries concerning Directory materials and their use should be directed to the Secretary of the Society, W. Leighton Collins, University of Illinois, Urbana.

ENGINEERING ENROLLMENTS AND DEGREES IN ECPD-ACCREDITED INSTITUTIONS: 1957

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The term "ECPD-Accredited Institutions" refers to those institutions in which one or more engineering curricula are accredited by the Engineers' Council for Professional Development. Engineering enrollment and degree data for *all* institutions listed in the Office of Education Directory of Higher Education which grant engineering degrees, including those accredited by the ECPD, will be published in the near future by the U. S. Office of Education (Circular No. 516, *Engineering Enrollments and Degrees: 1957*).

Summary

1. Total engineering enrollment in the United States and its outlying parts in institutions accredited by the ECPD reached an *all-time high of 257,777 students in the fall of 1957.* This represented a 5.5% rise over the previous peak of 244,390 students reported in 1947.

2. Engineering enrollment has shown year-to-year increases since 1951.

3. In the fall of 1957, total male engineering students in ECPD-accredited institutions made up 12.8% of total male degree-credit enrollment, compared with 12.5% a year earlier.

4. The enrollment of 67,071 freshmen in the fall of 1957 was 1.0% higher than last year. All other classes of enrollment in ECPD-accredited institutions, except sophomores, also showed increases.

5. Part-time and evening undergraduate engineering enrollment in the fall of 1957, reported as 30,458 students, was 17.1% above the year before.

6. Enrollment for the master's degree in the fall of 1957 in ECPD-accredited institutions increased 7.6% from the year before.

7. Enrollment for the doctor's degree in the fall of 1957 in ECPD-accredited institutions, 4,180 students, increased a substantial 22.9% from the year before.

8. Evening student enrollment for the doctor's degree in ECPD-accredited institutions in the fall of 1957, 690 students, increased very substantially, 30.7%, from the year before.

9. During the 1956–57 academic year, 27,748 first-level engineering degrees were awarded by ECPD-accredited institutions—a noteworthy increase of 17.8% from the year before.

10. First-level degrees in engineering awarded during 1956–57 constituted 8.0% of total first-level degrees (estimated), a higher percentage than the 7.6% observed for 1955–56.

11. A total of 5,203 master's degrees in engineering were granted by ECPD-accredited institutions—an 11.2% increase from totals of the year before.

12. ECPD-accredited institutions granted a total of 596 doctor's degrees in engineering in 1956–57—2.3% fewer than the year before.

13. During the 1956–57 academic year, the highest percentage of engineering degrees awarded by ECPD-accredited institutions for *first-level, master's,* and *post-graduate predoctoral* degrees was in the field of electrical engineering. For the *doctor's,* the highest percentage of degrees awarded was in chemical engineering.

Introduction

After substantial year-to-year increases since 1951, total engineering enrollment in the United States and its outlying parts in the 152 institutions accredited by the Engineers' Council for Professional Development (ECPD) reached an *all-time high of 257,777 students in the fall of 1957.* This enrollment, which was reported by 100% of the ECPD-accredited institutions, represented a 6.3% increase from the enrollment in the fall of 1956, and a 5.5% increase over the previous peak of 244,390 students reported in 1947. Total engineering enrollment in ECPD-accredited institutions in the fall of 1956 amounted to a 14.4% rise from the enrollment in 1955.

While total degree-credit enrollment in the United States and its outlying parts likewise has shown persistent year-to-year increases since 1951, it has generally increased at a slower rate. Total degree-credit enrollment in the fall of 1957 rose 4.1% over the year before, and 10.0% in 1956 over a year earlier. Accordingly, the percentage of college enrollment made up of engineering students has risen steadily since 1951, except for a slight drop in 1954. In the fall of 1957, engineering students in institutions accredited by the ECPD accounted for 8.4% of total degree-credit enrollment, compared with 8.2% in 1956 and 7.9% in 1955.

It is perhaps more appropriate to compare total male engineering students with total male degree-credit enrollment in the United States and its outlying parts, since engineering enrollment is composed almost exclusively of men. In the fall of 1957, total male engineering students in ECPD-accredited institutions made up 12.8% of total male degree-credit enrollment, compared with 12.5% a year earlier. This percentage was 12.1% in 1955.

Undergraduate Enrollment

Except for sophomores, all levels of undergraduate engineering enrollment in the 152 ECPD-accredited institutions showed increases in the fall of 1957 over the year before. Freshman engineering enrollment, which amounted to 67,071 students in the fall of 1957, has increased annually since 1950. The year-to-year increase was 1.0% in 1957, compared with 8.6% in 1956 and 10.1% in 1955.

Engineering freshmen accounted for 9.2% of total first-time college enrollment in all institutions of higher education in the United States and its outlying parts in 1957—the same percentage as was noted for the previous year. In 1955, this percentage was 9.1%. When compared with first-

time male enrollment, new engineering students made up 15.1% in 1957, 14.9% in 1956, and 14.6% in 1955.

The 48,343 sophomores enrolled in engineering in the fall of 1957 represented a slight decrease (0.2 per cent) from the fall of 1956. It should be noted that this decrease occurred despite the 8.6% rise in engineering freshman enrollment the year before. Sophomore enrollment rose 10.6% from 1955 to 1956, compared with a 10.1% rise in engineering freshman enrollment a year earlier. The number of engineering juniors, 42,513, was 7.4% higher than the year before, as compared with a rise of 14.1% from 1955 to 1956. The 38,063 seniors enrolled in ECPD-accredited institutions in the fall of 1957 were 13.1% above the year before, compared with a 20.7% rise in 1956 above a year earlier.

Part-time and evening undergraduate engineering enrollment in the fall of 1957 totalled 30,458 students for ECPD-accredited institutions. This accounted for 13.3% of total undergraduate engineering enrollment, a higher proportion of this total than has been observed since 1952. In 1956, this proportion was 12.0%. Enrollment of undergraduate part-time and evening students in the fall of 1957 was 17.1% higher than in 1956, while in 1956 it was 26.6% higher than a year earlier.

Graduate Enrollment

Total graduate engineering enrollment in the fall of 1957 for the 128 ECPD-accredited institutions with graduate enrollment increased substantially over graduate enrollment a year earlier. Enrollment for the master's degree, 23,941 students, increased 7.6% from a year ago—a decline in the rate of increase of 20.8% noted for 1956. In 1955, engineering enrollment for the master's degree showed a year-to-year rise of 7.8%, while in 1954 it had declined 7.2%.

In the fall of 1957, the 11,208 evening students enrolled for the master's degree made up 46.8% of total engineering enrollment for the master's degree in ECPD-accredited institutions. This compares with 49.9% in 1956 and 48.7% in 1955. Evening student enrollment for the master's degree showed a year-to-year increase of 0.9% in the fall of 1957, compared with 23.9% in the fall of 1956.

Enrollment for the doctor's degree in the fall of 1957 for ECPD-accredited institutions amounted to 4,180 students—a substantial increase of 22.9% from the year before. In 1956, this enrollment category showed a year-to-year gain of 7.6%, reversing a 3.6% decline observed in 1955.

Evening student enrollment for the doctor's degree in ECPD-accredited institutions totalled 690 students in the fall of 1957—a very substantial rise of 30.7% over a year earlier. Last year evening student enrollment for the doctor's degree increased 3.9% from the year before. This category of evening student enrollment made up 16.5% of total engineering enrollment for the doctor's degree in ECPD-accredited institutions in 1957, compared with 15.5% in 1956 and 16.1% in 1955.

First-Level Degrees

During the 1956–57 academic year, 27,748 first-level engineering degrees were awarded by the 152 ECPD-accredited institutions. This represents an increase of 17.8% from the year before, reflecting higher enrollment of engineering freshmen in 1953. This was the third year that the number of first-level engineering degrees awarded has shown an increase from the year before. In 1955–56, the number of first-level engineering degrees conferred by ECPD-accredited institu-

tions was 16.6% higher than the year before and, in 1954–55, it was 2.5% higher.

Total first-level degrees awarded in all fields during 1955–56 in the continental United States rose an estimated 12.4% from the year before, a lower rate than for first-level engineering degrees. Accordingly, first-level degrees in engineering awarded during 1956–57 constituted 8.0% of total first-level degrees (estimated), a higher proportion than the 7.6% observed for 1955–56 and 7.1% observed for 1954–55.

Advanced Degrees

A total of 5,203 master's degrees in engineering were granted by ECPD-accredited institutions in 1956–57, amounting to an 11.2% increase from last year. The number of engineering master's degrees conferred has been increasing steadily since 1953. The year-to-year increase in master's degrees conferred was 5.3% in 1955–56, 7.6% in 1954–55, and 10.8% in 1953–54.

Total master's degrees conferred in all fields during 1956–57 in the continental United States rose an estimated 11.2% from the year before. This is the same percentage rise as was noted for the number of master's degrees in engineering granted by ECPD-accredited institutions in 1956–57 when compared with the year before. Hence, the number of master's degrees in engineering awarded by these institutions made up 7.9% of the estimated total master's degrees awarded in all fields in continental United States in 1956–57—the same as for the year before.

ECPD-accredited institutions granted a total of 596 doctor's degrees in engineering in 1956–57, 2.3% fewer than the year before. This reverses the two-year pattern of increases observed since 1953–54. In 1955–56, the number of such doctor's degrees awarded rose 1.8% from the year before, and in 1954–55 the year-to-year rise was 1.5%.

Total doctor's degrees awarded in all fields in the continental United States declined an estimated 5.0% from the year earlier. The percentage of total doctor's degrees granted in the field of engineering was 7.0% for 1956–57, compared with 6.9% for 1955–56 and 6.8% in 1954–55.

Choice of Fields

Analysis of degrees granted by ECPD-accredited institutions during 1956–57 was made to determine the relative output of engineers in the various curricula. The five engineering curricula for which the largest numbers of degrees were awarded, at each level, were observed and ranked. For purposes of this analysis, the unclassified category was ignored.

Among *first-level degrees* awarded, electrical engineering ranked first; mechanical engineering second; civil engineering third; chemical engineering fourth; and industrial engineering fifth. It is interesting to note that during each of the previous eight academic years, 1948–49 through 1955–56, mechanical engineering ranked first, and electrical engineering second, for first-level engineering degrees awarded.

Analysis of advanced degrees awarded by ECPD-accredited institutions indicates that the highest percentage of *master's degrees* awarded in 1956–57 was in electrical engineering. Civil engineering was second; mechanical engineering third; chemical engineering fourth; and industrial engineering fifth.

The highest percentage of *post-graduate pre-doctoral* degrees awarded in 1956–57 by ECPD-accredited institu-

tions was in electrical engineering. Naval architecture and marine engineering was second, chemical engineering third, while civil engineering and aeronautical engineering were tied for fourth place.

The highest percentage of *doctor's degrees* awarded by ECPD-accredited institutions in 1956–57 was in chemical engineering. Electrical engineering was second; mechanical engineering third; metallurgical engineering fourth; and civil engineering fifth.

Notes

The data contained in this report are based on a survey of engineering schools and colleges made in October, 1957, under the joint sponsorship of the U. S. Office of Education and the American Society for Engineering Education. In accordance with an agreement reached by a joint committee of the Office of Education and the ASEE, all institutions listed in the Office of Education Directory of Higher Education [1] which reported the conferral of degrees in engineering during 1956–57 [2] were requested to furnish data. Ten Canadian institutions were also invited to participate in the study. This survey collected enrollment and degree data for all institutions accredited by the ECPD, 69 other United States institutions (two of which offer post-graduate training only), and 10 Canadian institutions.

[1] *Education Directory*, 1956–57, *Part III*, "Higher Education" (U. S. Office of Education).

[2] *Earned Degrees Conferred in Higher Educational Institutions*, 1956–57 (to be published in the near future, U. S. Office of Education).

As proposed by the joint ASEE and Office of Education Committee, and approved by the ASEE General Council, the statistical tables in this report list individually only those institutions (eligible for active institutional membership in the ASEE) in which at least one curriculum has been accredited by ECPD, but contain summary totals for other engineering schools in the United States and for Canadian institutions.

Requests for the data upon which this report is based were directed to the registrars of the institutions concerned. The Office of Education appreciates the splendid cooperation of these officials, as reflected by a 100% response.

Period covered: Engineering schools were asked to report student enrollment as of October 3, 1957. A few institutions, because of late openings, were unable to report before November. Degree data are for the period July 1, 1956, to June 30, 1957.

Undergraduate students: Institutions were requested to report by class level only those students enrolled definitely as candidates for an engineering degree. "Part-time students" (both day and evening) includes students not working toward a degree, as well as degree candidates.

Graduate students: Institutions were requested to report "all students who have been admitted to formal graduate standing and are enrolled in graduate courses, regardless of the number of credit hours carried by the student, and regardless of whether the student's work is administered by the engineering college or the graduate school."

TABLE I

Engineering Enrollments and Degrees in ECPD-Accredited Institutions 1949–1957

(For United States and outlying parts)

Year	Number Enrolled for Their First Engineering Degree (Fall)							No. of First Eng'g Degrees Conferred
	Freshmen	Sophomore	Junior	Senior	5th Year	Part Time and Evening	Total	
1949	36,508	35,648	41,695	50,991	2,326	13,478	180,646	41,793 (1948–49)
1950	29,394	27,242	30,957	37,707	3,150	14,504	142,954	48,160 (1949–50)
1951	34,147	23,408	24,757	27,820	2,946	15,289	128,367	37,904 (1950–51)
1952	45,854	26,636	22,369	23,453	2,563	17,295	138,170	27,155 (1951–52)
1953	52,482	32,953	23,975	21,730	2,396	16,890	150,426	21,642 (1952–53)
1954	55,531	38,345	28,699	22,677	2,323	19,528	167,103	19,707 (1953–54)
1955	61,141	43,775	34,696	27,869	2,323	20,551	190,355	20,200 (1954–55)
1956	66,409	48,423	39,578	33,646	2,686	26,021	216,763	23,547 (1955–56)
1957	67,071	48,343	42,513	38,063	3,208	30,458	229,656	27,748 (1956–57)

Year	Number Enrolled in Work for the Master's Degree[1]			No. of Master's Degrees Conferred[1]	Number Enrolled in Work for the Doctor's Degree			No. of Doctor's Degrees Conferred
	Day Students, Full and Part Time	Evening	Total		Day Students, Full and Part Time	Evening	Total	
1949	10,333	4,746	15,079	4,783 (1948–49)	2,386	155	2,541	417 (1948–49)
1950	8,150	7,425	15,575	4,865 (1949–50)	2,342	453	2,795	492 (1949–50)
1951	6,878	9,574	16,452	5,134 (1950–51)	2,419	456	2,875	586 (1950–51)
1952	7,422	9,996	17,418	4,132 (1951–52)	2,261	669	2,930	586 (1951–52)
1953	8,084	10,321	18,405	3,726 (1952–53)	2,298	703	3,001	592 (1952–53)
1954	8,296	8,776	17,072	4,130 (1953–54)	2,483	796	3,279	590 (1953–54)
1955	9,439	8,968	18,407	4,444 (1954–55)	2,653	508	3,161	599 (1954–55)
1956	11,135	11,107	22,242	4,678 (1955–56)	2,872	528	3,400	610 (1955–56)
1957	12,733	11,208	23,941	5,203 (1956–57)	3,490	690	4,180	596 (1956–57)

	1949	1950	1951	1952	1953	1954	1955	1956	1957
Total degree-credit enrollment in U. S.*	2,456,000	2,297,000	2,116,000	2,148,000	2,251,000	2,499,750	2,678,623	2,946,985	3,068,417
Engineering enrollment in U. S.**	198,266	161,324	147,694	158,518	171,832	187,454	211,923	242,405	257,777
Per cent engineering to total	8.1%	7.0%	7.0%	7.4%	7.6%	7.5%	7.9%	8.2%	8.4%

[1] Includes other pre-doctoral.

* Includes outlying parts.

** Only in ECPD-accredited institutions; including outlying parts.

TABLE II

SUMMARY OF UNDERGRADUATE ENROLLMENTS AND BACHELOR'S OR FIRST PROFESSIONAL DEGREES IN ENGINEERING IN THE UNITED STATES, OUTLYING PARTS, AND CANADA, BY CURRICULUM: 1957

Engineering Curriculum	No. of Schools[1]	No. of First Eng'g Degrees Conferred 1956–57		Number Enrolled for Their First Engineering Degree: Fall 1957									
				Total		1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	5th Yr. of 5-Yr. Curriculum	5th Yr. of Co-operative Program	Part-Time and Special Day Students	Evening Students
		Men	Women	Men	Women								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Schools accredited by ECPD:													
Aeronautical	50	979	5	9,043	55	2,822	2,315	1,758	1,531	58	40	186	388
Agricultural	44	359	—	1,997	1	530	443	506	496	12	2	9	—
Architectural	26	258	1	1,674	43	471	436	365	331	75	14	8	17
Ceramic	15	128	—	867	25	218	258	217	188	11	—	—	—
Chemical	113	2,691	21	18,548	250	5,208	4,827	3,855	3,530	171	191	265	751
Civil	139	4,266	9	26,140	115	6,260	6,037	5,985	5,664	183	259	425	1,442
Electrical	142	7,500	10	57,287	204	13,004	14,057	12,657	10,704	305	526	1,145	5,093
Engineering Mechanics	4	7	—	48	2	1	13	30	5	—	—	1	—
Engineering Physics	26	214	2	2,229	38	553	618	510	477	34	—	17	58
General Engineering	27	621	3	4,292	31	1,470	967	880	648	9	—	88	261
Geological	24	227	—	1,441	4	377	359	330	354	11	—	11	3
Geophysical	5	33	—	230	3	64	66	58	43	1	—	1	—
Industrial[2]	68	1,590	5	7,609	53	993	1,639	1,871	2,147	85	78	257	592
Mechanical	137	6,938	14	46,405	179	10,193	10,443	10,502	9,158	494	494	1,070	4,230
Metallurgical	51	572	—	3,432	18	649	823	836	693	33	41	42	333
Mining	31	221	—	1,204	2	313	279	296	276	18	—	6	18
Naval Arch. & Marine	3	33	—	189	1	26	65	44	53	—	—	2	—
Petroleum	23	644	—	4,869	8	1,215	969	1,036	1,155	32	—	158	312
Sanitary	3	10	—	17	—	—	3	7	7	—	—	—	—
Textile	5	50	—	362	7	118	62	78	109	—	—	2	—
Unclassified	99	3	1	37,926	402	21,832	3,160	247	95	5	11	1,220	11,758
Other	36	329	4	2,382	24	754	504	445	399	11	4	57	232
Total ECPD	152	27,673	75	228,191	1,465	67,071	48,343	42,513	38,063	1,548	1,660	4,970	25,488
Other U. S. schools	67	3,457	6	38,909	196	11,686	8,145	5,871	4,531	254	441	650	7,527
All U. S. schools	219	31,130	81	267,100	1,661	78,757	56,488	48,384	42,594	1,802	2,101	5,620	33,015
Canadian schools	10	1,520	2	9,830	30	3,330	2,351	1,881	1,839	456	—	3	—
Grand Total (U. S. and Canada)	229	32,650	83	276,930	1,691	82,087	58,839	50,265	44,433	2,258	2,101	5,623	33,015

[1] This refers to the number of schools offering given curriculum. Such curriculum may or may not be specifically approved by ECPD.
[2] Includes administrative engineering, management engineering, etc.

TABLE III

UNDERGRADUATE ENGINEERING ENROLLMENT AS OF OCTOBER 3, 1957, AND FIRST ENGINEERING DEGREES CONFERRED IN 1956–57, BY SCHOOL

Institution	No. of First Eng'g Degrees Conferred 1956–57		Number Enrolled for Their First Engineering Degree: Fall 1957									
			Total		1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	5th Yr. of 5-Yr. Curriculum	5th Yr. of Cooperative Program	Part-Time and Special Day Students	Evening Students
	Men	Women	Men	Women								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ECPD accredited schools:												
Alabama												
Ala. Poly	367	—	2,765	17	1,166	680	521	407	—	—	8	—
Univ. Ala.	159	2	2,542	32	473	398	282	203	—	—	3	1,215
Arizona												
Univ. Ariz.	163	—	1,830	9	611	485	365	333	—	—	28	17
Arkansas												
Univ. Ark.	154	1	1,131	6	301	322	268	240	—	—	6	—
California												
Calif. Inst. Tech.	88	—	419	—	187	70	85	77	—	—	—	—
Stanford	211	1	1,292	7	411	239	323	326	—	—	—	—
U. S. Naval PG Sch.	78	—	402	—	—	—	230	172	—	—	—	—
Univ. Calif.[1]	779	4	3,002	20	529	442	1047	994	—	—	10	—
Univ. Santa Clara	60	—	337	—	100	90	92	55	—	—	—	—
Univ. Sou. Calif.	260	—	1,673	15	133	167	526	536	—	—	48	278
Colorado												
Colo. Mines	160	—	1,036	7	338	262	248	195	—	—	—	—
Colo. St. Univ.	64	—	742	—	275	191	176	100	—	—	—	—
Univ. Colo.	322	2	3,658	34	712	587	524	481	48	—	6	1,334
Univ. Denver	37	—	338	3	99	96	80	41	—	2	16	7
Connecticut												
Univ. Conn.	131	—	1,387	10	610	356	236	195	—	—	—	—
Yale Univ.	207	—	517	—	—	172	186	155	4	—	—	—
Delaware												
Univ. Delaware	85	4	525	8	183	138	109	101	—	—	2	—
Florida												
Univ. Florida	283	—	2,386	7	900	600	359	354	—	175	5	—
Georgia												
Ga. Tech.	593	—	3,855	23	1,414	1,054	665	738	—	—	7	—
Idaho												
Univ. Idaho	110	—	854	—	289	208	204	153	—	—	—	—
Illinois												
Bradley	58	1	817	5	258	153	133	117	—	—	9	152
Ill. Inst. Tech.	319	—	6,030	128	332	374	403	368	—	—	1	4,680
Northwestern	96	—	1,007	12	277	184	161	121	—	128	34	114
Univ. Ill.	729	2	5,514	34	1,922	1,327	984	1,218	45	—	52	—
Indiana												
Notre Dame	235	—	1,162	—	362	317	237	246	—	—	—	—
Purdue	1,027	2	6,668	69	2,948	886	1,195	1,318	—	—	390	—
Rose Poly	85	—	431	—	153	103	83	83	—	—	9	—

TABLE III—*Continued*

UNDERGRADUATE ENGINEERING ENROLLMENT AS OF OCTOBER 3, 1957, AND FIRST ENGINEERING DEGREES CONFERRED IN 1956–57, BY SCHOOL

Iowa												
Iowa St. Col. of A. & M. Arts	433	—	3,317	22	1,260	727	807	537	—	—	8	—
St. Univ. Iowa	119	—	755	1	209	184	223	139	—	—	1	—
Kansas												
Kan. St. Col.	228	—	1,882	7	495	495	458	406	—	—	35	—
Mun. Univ. Wichita	40	—	1,398	5	219	176	130	82	—	—	493	303
Univ. Kan.	214	4	2,084	16	539	521	553	480	—	—	7	—
Kentucky												
Univ. Ky.	220	1	1,962	10	771	494	291	293	—	—	108	15
Univ. Louisville	74	—	640	1	208	138	122	79	92	—	2	—
Louisiana												
La. Poly.	102	—	1,055	2	476	244	190	145	—	—	2	—
La. St. Univ.	257	1	2,503	10	1,150	437	511	412	3	—	—	—
S. W. La. Inst.	64	—	991	2	411	253	210	119	—	—	—	—
Tulane	65	1	497	2	201	123	85	78	—	—	12	—
Maine												
Univ. Maine	169	—	1,265	3	425	344	263	210	15	—	11	—
Maryland												
Johns Hopkins	130	—	1,218	—	146	130	125	111	—	—	6	700
Univ. Md.	150	2	1,900	15	788	549	263	226	—	—	89	—
Massachusetts												
Harvard	31	—	178	—	—	66	56	48	8	—	—	—
Lowell Tech.	50	—	1,631	13	358	219	137	112	—	—	13	805
Mass. Inst. Tech.	614	—	2,527	19	551	651	640	704	—	—	—	—
Northeastern	327	—	2,890	29	884	544	561	494	—	436	—	—
Tufts	122	3	619	7	224	152	132	118	—	—	—	—
Univ. Mass.	125	1	1,045	9	309	255	207	196	—	—	87	—
Worcester	174	—	976	—	299	268	241	168	—	—	—	—
Michigan												
Mich. M. & T.	302	—	2,201	8	708	613	460	404	24	—	—	—
Mich. St. Univ.	316	1	2,369	12	741	511	595	355	—	—	158	21
Univ. Detroit	170	—	2,074	8	415	296	346	250	—	199	44	532
Univ. Mich.	493	4	3,237	57	778	1,028	804	593	—	—	91	—
Wayne St. Univ.	115	2	1,792	14	391	289	218	194	—	—	714	—
Minnesota												
Univ. Minn.	353	1	3,511	17	985	686	773	534	473	—	77	—
Mississippi												
Miss. St. Col.	193	—	1,693	6	625	441	386	242	5	—	—	—
Univ. Miss.	38	—	320	2	109	83	81	49	—	—	—	—
Missouri												
Mo. Mines	325	1	2,536	4	719	611	690	520	—	—	—	—
Mo. Univ.	186	1	1,533	13	461	419	352	302	—	—	12	—
St. Louis Univ.	94	—	757	4	240	225	131	140	—	—	19	6
Wash. Univ. (St. L.)	165	1	1,314	57	327	325	257	222	—	—	—	240
Montana												
Mont. Mines	37	—	232	2	88	68	36	42	—	—	—	—
Mont. St. Col.	121	—	1,193	2	467	371	164	193	—	—	—	—
Nebraska												
Univ. Nebr.	158	—	1,331	7	443	383	286	226	—	—	—	—

TABLE III—*Continued*

UNDERGRADUATE ENGINEERING ENROLLMENT AS OF OCTOBER 3, 1957, AND FIRST ENGINEERING DEGREES CONFERRED IN 1956–57, BY SCHOOL

Institution	No. of First Eng'g Degrees Conferred 1956–57		Number Enrolled for Their First Engineering Degree: Fall 1957									
			Total		1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	5th Yr. of 5-Yr. Curriculum	5th Yr. of Cooperative Program	Part-Time and Special Day Students	Evening Students
	Men	Women	Men	Women								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Nevada												
Univ. Nevada	55	—	503	4	216	114	117	60	—	—	—	—
New Hampshire												
Dartmouth	26	—	399	—	164	101	57	47	30	—	—	—
Univ. New Hamp.	100	1	674	1	212	174	164	118	—	—	7	—
New Jersey												
Newark	372	3	2,832	23	433	427	339	308	—	—	1	1,347
Princeton	110	—	533	—	170	138	100	125	—	—	—	—
Rutgers, The State Univ.	71	1	790	9	333	208	128	106	7	—	17	—
Stevens	161	—	945	—	293	274	222	156	—	—	—	—
New Mexico												
N. Mex. A. & M.	101	—	1,161	10	329	211	188	150	—	—	293	—
Univ. N. Mex.	109	—	1,060	9	514	238	180	125	—	—	8	4
New York												
Alfred	47	—	287	14	94	76	78	53	—	—	—	—
City Col. of N. Y.	488	2	5,813	60	1,850	1,049	705	786	—	—	—	1,483
Clarkson	144	—	1,050	—	375	278	204	193	—	—	—	—
Columbia	166	1	295	4	—	—	148	151	—	—	—	—
Cooper Union	85	—	737	12	102	102	81	77	—	—	—	387
Cornell	225	1	2,085	23	645	507	343	315	298	—	—	—
Manhattan	179	—	981	—	315	200	214	244	—	—	8	—
N. Y. Univ.	325	—	1,883	9	298	223	261	232	—	—	29	849
Poly. Inst. Brooklyn	482	—	3,371	—	480	315	319	342	—	—	—	1,915
Pratt	53	—	470	16	178	127	85	70	—	—	26	—
Rensselaer	586	—	2,492	2	688	600	573	583	—	—	2	48
Syracuse	98	—	682	12	242	135	168	135	—	—	14	—
Union Col.	62	—	512	—	133	94	85	74	—	—	—	126
Univ. Rochester	34	1	375	6	115	76	80	52	—	—	—	58
Webb	10	—	65	—	21	16	15	13	—	—	—	—
North Carolina												
Duke Univ.	84	—	481	8	172	136	96	80	—	—	5	—
N. C. St. Col.	348	1	3,325	18	1,113	881	709	640	—	—	—	—
North Dakota												
N. Dak. Ag. Col.	145	—	1,054	1	281	291	277	204	—	—	2	—
Univ. N. Dak.	74	—	799	2	249	230	180	140	—	—	2	—

TABLE III—*Continued*

UNDERGRADUATE ENGINEERING ENROLLMENT AS OF OCTOBER 3, 1957, AND FIRST ENGINEERING DEGREES CONFERRED IN 1956–57, BY SCHOOL

Ohio												
A. F. Inst. Tech.	26	—	89	—	—	—	49	40	—	—	—	—
Antioch Col.	7	—	95	—	25	27	12	17	—	12	2	—
Case Inst.	257	—	1,287	1	377	333	314	259	—	—	5	—
Fenn Col.	77	—	1,608	—	346	140	82	103	—	62	—	875
Ohio No. Univ.	29	—	265	2	99	87	49	20	—	—	12	—
Ohio St. Univ.	259	—	3,228	—	895	645	495	496	320	—	74	303
Ohio Univ.	112	—	1,038	3	350	283	220	188	—	—	—	—
Univ. Akron	35	—	557	2	234	120	71	41	—	46	3	44
Univ. Cincinnati	157	—	4,153	14	442	361	285	219	—	234	—	2,626
Univ. Dayton	81	—	1,116	—	335	209	149	112	—	—	—	311
Univ. Toledo	90	1	1,024	5	273	161	108	93	—	—	—	394
Youngstown Univ.	62	—	1,532	10	297	242	155	101	2	—	—	745
Oklahoma												
Okla. St. U. of A. & A. S.	318	—	2,221	20	625	487	528	599	—	—	2	—
Univ. Okla.	395	—	2,801	20	889	566	530	836	—	—	—	—
Univ. Tulsa	61	—	947	4	256	167	131	95	—	—	11	291
Oregon												
Oregon St. Col.	207	1	1,686	4	661	392	357	280	—	—	—	—
Pennsylvania												
Bucknell	55	—	415	7	164	102	88	65	3	—	—	—
Carnegie	293	1	1,888	12	286	282	264	308	—	—	7	753
Drexel	384	—	2,352	18	496	652	319	324	—	271	10	298
Lafayette	118	—	649	—	229	170	131	117	2	—	—	—
Lehigh	308	—	1,482	—	439	395	338	310	—	—	—	—
Pa. St. Univ.	603	4	4,094	16	1,670	932	750	751	7	—	—	—
Swarthmore	27	—	86	3	33	26	13	17	—	—	—	—
Univ. Pa.	91	—	539	5	157	160	121	106	—	—	—	—
Univ. Pittsburgh	316	—	2,468	15	453	447	465	397	—	—	—	721
Villanova	156	—	1,076	—	351	218	196	178	20	—	—	113
Rhode Island												
Brown	32	—	270	2	100	58	57	41	16	—	—	—
Univ. R. I.	112	—	686	4	191	181	166	152	—	—	—	—
South Carolina												
Citadel	87	—	657	—	245	174	143	95	—	—	—	—
Clemson	176	—	1,826	1	867	507	269	184	—	—	—	—
Univ. S. C.	117	—	658	1	186	130	193	150	—	—	—	—
South Dakota												
S. Dak. Mines	107	1	840	2	279	213	179	171	—	—	—	—
S. Dak. St. Col. of A. & M. Arts	98	1	1,034	5	372	312	199	154	—	—	2	—
Tennessee												
Univ. Tenn.	212	—	2,406	11	796	553	468	296	—	—	4	300
Vanderbilt	97	1	694	11	212	202	153	138	—	—	—	—

TABLE III—*Continued*

UNDERGRADUATE ENGINEERING ENROLLMENT AS OF OCTOBER 3, 1957, AND FIRST ENGINEERING DEGREES CONFERRED IN 1956–57, BY SCHOOL

Institution	No. of First Eng'g Degrees Conferred 1956–57		Number Enrolled for Their First Engineering Degree: Fall 1957									
			Total		1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	5th Yr. of 5-Yr. Curriculum	5th Yr. of Cooperative Program	Part-Time and Special Day Students	Evening Students
	Men	Women	Men	Women								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Texas												
Rice	63	—	668	25	250	190	92	94	67	—	—	—
Southern Meth.	89	—	805	4	234	138	182	156	—	95	4	—
Tex. A. & M.	397	—	3,306	—	1,309	647	596	722	16	—	16	—
Tex. Col. A. & I.	37	—	614	—	212	194	108	100	—	—	—	—
Tex. Tech. Col.	199	—	2,540	10	845	653	539	477	7	—	—	29
Tex. Western	44	1	804	9	282	158	103	71	—	—	—	199
Univ. Houston	102	—	2,057	12	256	191	158	192	—	—	1,272	—
Univ. Tex.	422	1	3,463	16	850	730	942	957	—	—	—	—
Utah												
Univ. Utah	144	—	1,304	—	275	340	278	386	16	—	9	—
Utah St. U. of A. & A. S.	74	—	629	—	207	166	168	88	—	—	—	—
Vermont												
Norwich	49	—	299	—	118	83	49	49	—	—	—	—
Univ. Vermont	42	—	445	5	185	132	81	49	—	—	3	—
Virginia												
Univ. Va.	85	—	811	—	246	263	173	129	—	—	—	—
Va. Mil. Inst.	72	—	453	—	194	100	86	73	—	—	—	—
Va. Poly.	305	2	3,304	21	1,150	886	682	593	—	—	14	—
Washington												
Univ. Wash.	402	3	2,318	11	932	516	464	414	3	—	—	—
Wash. St. Col.	137	2	1,048	3	401	262	207	165	16	—	—	—
West Virginia												
Univ. W. Va.	126	1	1,295	5	320	402	341	231	—	—	6	—
Wisconsin												
Marquette	227	—	1,683	16	342	278	220	214	—	—	8	637
Univ. Wisc.	427	—	4,081	24	1,426	1,005	825	661	—	—	41	147
Wyoming												
Univ. Wyo.	107	—	783	5	254	161	177	166	—	—	30	—
Dist. of Columbia												
Catholic Univ.	28	—	368	—	86	79	84	63	—	—	3	53
Geo. Wash. Univ.	69	1	737	9	136	107	76	39	—	—	388	—
Howard Univ.	32	—	516	8	259	123	75	67	—	—	—	—
Alaska												
Univ. Alaska	8	—	165	—	77	34	19	14	1	—	7	13
Hawaii												
Univ. Hawaii	50	—	528	9	177	130	119	111	—	—	—	—
Total ECPD Schools	27,673	75	228,191	1,465	67,071	48,343	42,513	38,063	1,548	1,660	4,970	25,488

[1] All campuses offering engineering—namely, Berkeley, Los Angeles, and Davis. (For 1954 and prior years, data for campuses offering engineering (Berkeley and Los Angeles) were separately reported.)

TABLE IV

SUMMARY OF GRADUATE ENROLLMENT AND DEGREES IN ENGINEERING IN THE UNITED STATES,

TABLE IV

SUMMARY OF GRADUATE ENROLLMENT AND DEGREES IN ENGINEERING IN THE UNITED STATES, OUTLYING PARTS, AND CANADA, BY CURRICULUM: 1957

Engineering Curriculum	No. of Schools[1]	No. of Master's Degrees Conferred in Eng'g 1956–57		Number Enrolled in Work for the Master's Degree: Fall 1957				No. of Post-Grad. Pre-Doctoral Degrees[2] Conferred in Eng'g 1956–57		Number Enrolled in Work for Other Post-Graduate Pre-Doctoral Degrees:[2] Fall 1957				No. of Doctor's Degrees Conferred in Eng'g 1956–57		Number Enrolled in Work for the Doctor's Degree: Fall 1957			
				Total		Day Students, Full-Time and Part-Time	Evening and Special Students			Total		Day Students, Full-Time and Part-Time	Evening and Special Students			Total		Day Students, Full-Time and Part-Time	Evening and Special Students
		Men	Wo.	Men	Wo.			Men	Wo.	Men	Wo.			Men	Wo.	Men	Wo.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
ECPD-accredited schools:																			
Aeronautical	39	241	2	992	8	591	409	14	—	39	1	40	—	32	—	188	2	143	47
Agricultural	30	69	—	172	—	171	1	—	—	—	—	—	—	13	—	54	—	48	6
Architectural	8	12	—	33	1	33	1	—	—	—	—	—	—	—	—	—	—	—	—
Ceramic	16	28	—	75	3	77	1	1	—	1	—	1	—	14	—	55	—	54	1
Chemical	91	585	1	1,886	14	1,257	643	16	—	9	—	9	—	146	—	725	3	633	95
Civil	100	832	4	2,435	4	1,558	881	14	—	35	—	23	12	39	—	331	2	298	35
Electrical	105	1,265	2	7,637	13	3,597	4,053	40	—	69	—	60	9	130	—	1,195	3	903	295
Engineering Mechanics	31	70	1	395	—	272	123	1	—	—	—	—	—	15	—	149	—	139	10
Engineering Physics	13	44	—	145	—	126	19	—	—	1	—	1	—	17	—	85	1	86	—
General Engineering	11	76	—	466	2	312	156	—	—	—	—	—	—	9	—	85	—	85	—
Geological	11	19	—	101	—	101	—	1	—	3	—	3	—	1	—	20	—	20	—
Geophysical	3	2	—	26	—	26	—	—	—	10	—	10	—	—	—	5	—	5	—
Industrial[3]	46	392	1	2,081	1	760	1,322	2	—	1	—	1	—	17	—	123	1	75	49
Mechanical	102	793	3	3,980	12	2,283	1,709	13	—	42	—	40	2	67	—	529	5	438	96
Metallurgical	44	134	—	621	3	366	258	6	—	4	—	4	—	52	1	296	2	250	48
Mining	21	22	—	56	—	51	5	5	—	3	—	2	1	—	—	18	—	14	4
Naval Arch. & Marine	4	41	—	36	—	36	—	26	—	74	—	74	—	2	—	5	—	5	—
Petroleum	16	87	—	192	—	162	30	—	—	—	—	—	—	4	—	15	—	15	—
Sanitary	19	74	—	79	—	73	6	—	—	2	—	2	—	8	—	33	—	30	3
Textile	3	6	1	36	1	37	—	—	—	—	—	—	—	—	—	4	—	4	—
Unclassified	23	44	—	1,324	32	82	1,274	—	—	—	—	—	—	—	—	20	—	20	—
Other	35	213	—	780	3	490	293	—	—	2	—	2	—	29	—	221	5	225	1
Total ECPD	128	5,049	15	23,548	97	12,461	11,184	139	—	295	1	272	24	595	1	4,156	24	3,490	690
Other U. S. Schools	6	29	—	195	—	28	167	—	—	—	—	—	—	—	—	—	—	—	—
All U. S. Schools	134	5,078	15	23,743	97	12,489	11,351	139	—	295	1	272	24	595	1	4,156	24	3,490	690
Canadian Schools	10	82	—	308	—	293	15	—	—	—	—	—	—	20	1	66	—	66	—
Grand Total (U. S. and Canada)	144	5,160	15	24,051	97	12,782	11,366	139	—	295	1	272	24	615	2	4,222	24	3,556	690

[1] This refers to the number of schools offering given curriculum. Such curriculum may or may not be specifically approved by ECPD.
[2] Other engineering degrees requiring work beyond the master's degree, but less than the requirements for a doctor's degree.
[3] Includes administrative engineering, management engineering, etc.

TABLE V

GRADUATE ENGINEERING ENROLLMENT AS OF OCTOBER 3, 1957, AND GRADUATE ENGINEERING DEGREES CONFERRED IN 1956–57, BY SCHOOL

Institution	No. of Master's Degrees Conferred in Eng'g 1956–57		Number Enrolled in Work for the Master's Degree: Fall 1957				No. of Post-Grad. Pre-Doctoral Degrees[1] Conferred in Eng'g 1956–57		Number Enrolled in Work for Other Post-Graduate Pre-Doctoral Degrees:[1] Fall 1957				No. of Doctor's Degrees Conferred in Eng'g 1956–57		Number Enrolled in Work for the Doctor's Degree: Fall 1957			
			Total		Day Students, Full-Time and Part-Time	Evening and Special Students			Total		Day Students, Full-Time and Part-Time	Evening and Special Students			Total		Day Students, Full-Time and Part-Time	Evening and Special Students
	Men	Wo.	Men	Wo.			Men	Wo.	Men	Wo.			Men	Wo.	Men	Wo.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
ECPD-accredited schools:																		
Alabama																		
Ala. Poly	6	—	28	1	29	—	—	—	—	—	—	—	—	—	—	—	—	—
Univ. Ala	8	—	82	—	15	67	—	—	—	—	—	—	—	—	—	—	—	—
Arizona																		
Univ. Ariz	20	—	202	—	110	92	8	—	—	—	—	—	—	—	24	—	24	—
Arkansas																		
Univ. Ark	4	—	23	—	23	—	—	—	—	—	—	—	—	—	—	—	—	—
California																		
Calif. Inst. Tech	98	—	119	1	120	—	25	—	47	1	48	—	17	—	57	—	57	—
Stanford	197	1	551	—	550	1	14	—	38	—	38	—	25	—	91	—	90	1
U. S. Naval PG Sch	46	—	73	—	73	—	—	—	—	—	—	—	—	—	—	—	—	—
Univ. Calif	206	—	650	7	657	—	—	—	—	—	—	—	27	—	237	—	237	—
Univ. Santa Clara	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Univ. Sou. Calif	201	1	836	5	680	161	—	—	10	—	10	—	1	—	42	—	42	—
Colorado																		
Colo. Mines	16	—	52	—	52	—	—	—	17	—	17	—	2	—	15	—	15	—
Colo. St. Univ	12	—	22	—	22	—	—	—	—	—	—	—	1	—	11	—	11	—
Univ. Colo	33	—	119	1	59	61	4	—	—	—	—	—	2	—	9	—	6	3
Univ. Denver	1	—	45	—	11	34	—	—	—	—	—	—	—	—	—	—	—	—
Connecticut																		
Univ. Conn	34	—	118	—	28	90	—	—	1	—	—	1	—	—	—	—	—	—
Yale Univ	36	—	129	—	109	20	—	—	—	—	—	—	13	—	52	—	51	1
Delaware																		
Univ. Delaware	21	—	130	—	24	106	—	—	—	—	—	—	6	—	28	—	18	10
Florida																		
Univ. Florida	30	—	56	1	57	—	—	—	—	—	—	—	3	—	18	—	18	—
Georgia																		
Ga. Tech	57	—	176	—	176	—	—	—	—	—	—	—	2	—	46	1	47	—
Idaho																		
Univ. Idaho	11	—	28	—	26	2	—	—	—	—	—	—	—	—	—	—	—	—

TABLE V—*Continued*

TABLE V—*Continued*

GRADUATE ENGINEERING ENROLLMENT AS OF OCTOBER 3, 1957, AND GRADUATE ENGINEERING DEGREES CONFERRED IN 1956–57, BY SCHOOL

Illinois																		
Bradley	1	—	16	—	2	14	—	—	—	—	—	—	—	—	—	—	—	—
Ill. Inst. Tech.	67	—	513	2	75	440	—	—	—	—	—	—	6	—	115	1	89	27
Northwestern	65	—	201	—	201	—	—	—	2	—	2	—	11	—	61	—	61	—
Univ. Ill.	203	2	343	2	338	7	3	—	—	—	—	—	33	—	209	3	212	—
Indiana																		
Notre Dame	26	—	107	—	38	69	—	—	—	—	—	—	—	—	3	—	2	1
Purdue	172	2	307	—	307	—	—	—	—	—	—	—	31	—	126	1	127	—
Rose Poly	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Iowa																		
Iowa St. Col. of A. & M. Arts	49	—	105	—	105	—	—	—	—	—	—	—	16	—	66	—	66	—
St. Univ. Iowa	25	—	58	—	58	—	—	—	—	—	—	—	2	—	25	—	25	—
Kansas																		
Kan. St. Col.	17	—	67	—	67	—	—	—	—	—	—	—	1	—	3	—	3	—
Mun. Univ. Wichita	5	—	47	—	—	47	—	—	—	—	—	—	—	—	—	—	—	—
Univ. Kan.	11	—	117	—	23	94	1	—	—	—	—	—	2	—	4	—	4	—
Kentucky																		
Univ. Ky.	11	—	60	—	60	—	—	—	—	—	—	—	1	—	2	—	2	—
Univ. Louisville	17	—	77	—	18	59	—	—	—	—	—	—	—	—	4	—	4	—
Louisiana																		
La. St. Univ.	24	—	64	—	64	—	—	—	—	—	—	—	3	—	11	1	6	6
Tulane	7	—	50	—	50	—	—	—	—	—	—	—	—	—	—	—	—	—
Maine																		
Univ. Maine	10	—	25	—	25	—	—	—	—	—	—	—	—	—	—	—	—	—
Maryland																		
Johns Hopkins	29	—	127	1	76	52	—	—	—	—	—	—	14	—	86	1	87	—
Univ. Md.	20	—	112	—	112	—	—	—	—	—	—	—	6	—	31	—	31	—
Massachusetts																		
Harvard	53	—	62	—	62	—	—	—	7	—	7	—	17	—	120	—	120	—
Lowell Tech.	3	—	33	1	34	—	—	—	—	—	—	—	—	—	—	—	—	—
Mass. Inst. Tech.	545	1	855	4	859	—	61	—	132	—	132	—	71	1	393	7	400	—
Northeastern	35	—	460	1	40	421	—	—	—	—	—	—	—	—	—	—	—	—
Univ. Mass.	5	—	17	—	3	14	—	—	—	—	—	—	—	—	—	—	—	—
Worcester	9	—	110	—	39	71	—	—	—	—	—	—	—	—	—	—	—	—
Michigan																		
Mich. M. & T.	10	—	22	1	23	—	2	—	—	—	—	—	—	—	—	—	—	—
Mich. St. Univ.	31	—	118	—	78	40	—	—	—	—	—	—	11	—	60	—	50	10
Univ. Detroit	—	—	15	—	—	15	—	—	—	—	—	—	—	—	—	—	—	—
Univ. Mich.	274	3	447	1	448	—	1	—	1	—	1	—	37	—	234	1	235	—
Wayne St. Univ.	32	—	271	2	273	—	—	—	—	—	—	—	—	—	—	—	—	—
Minnesota																		
Univ. Minn.	82	—	251	3	252	2	—	—	—	—	—	—	10	—	121	—	121	—
Mississippi																		
Miss. St. Col.	3	—	23	—	23	—	—	—	—	—	—	—	—	—	—	—	—	—
Univ. Miss.	3	—	10	—	10	—	—	—	—	—	—	—	—	—	—	—	—	—
Missouri																		
Mo. Mines	20	—	63	—	63	—	—	—	—	—	—	—	3	—	7	—	7	—
Mo. Univ.	21	—	52	1	53	—	—	—	—	—	—	—	—	—	5	—	5	—
St. Louis Univ.	13	—	248	—	8	240	—	—	—	—	—	—	—	—	—	—	—	—
Wash. Univ. (St. L.)	24	—	152	—	97	55	—	—	—	—	—	—	6	—	40	1	36	5

TABLE V—*Continued*

GRADUATE ENGINEERING ENROLLMENT AS OF OCTOBER 3, 1957, AND GRADUATE ENGINEERING DEGREES CONFERRED IN 1956–57, BY SCHOOL

Institution	No. of Master's Degrees Conferred in Eng'g 1956–57		Number Enrolled in Work for the Master's Degree: Fall 1957				No. of Post-Grad. Pre-Doctoral Degrees[1] Conferred in Eng'g 1956–57		Number Enrolled in Work for Other Post-Graduate Pre-Doctoral Degrees:[1] Fall 1957				No. of Doctor's Degrees Conferred in Eng'g 1956–57		Number Enrolled in Work for the Doctor's Degree: Fall 1957			
			Total		Day Students, Full-Time and Part-Time	Evening and Special Students			Total		Day Students, Full-Time and Part-Time	Evening and Special Students			Total		Day Students, Full-Time and Part-Time	Evening and Special Students
	Men	Wo.	Men	Wo.			Men	Wo.	Men	Wo.			Men	Wo.	Men	Wo.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Montana																		
Mont. Mines	4	—	16	—	16	—	—	—	—	—	—	—	—	—	—	—	—	—
Mont. St. Col.	5	—	29	—	29	—	—	—	—	—	—	—	—	—	9	—	9	—
Nebraska																		
Univ. Nebr.	8	—	30	—	30	—	—	—	—	—	—	—	—	—	—	—	—	—
Nevada																		
Univ. Nevada	4	—	14	—	14	—	—	—	—	—	—	—	—	—	—	—	—	—
New Hampshire																		
Univ. New Hamp.	3	—	8	—	8	—	—	—	—	—	—	—	—	—	—	—	—	—
New Jersey																		
Newark	151	1	673	3	—	676	—	—	—	—	—	—	—	—	—	—	—	—
Princeton	42	—	86	—	86	—	—	—	—	—	—	—	10	—	42	—	42	—
Rutgers, The State Univ.	8	—	62	2	37	27	—	—	—	—	—	—	5	—	35	—	16	19
Stevens	117	—	662	—	—	662	—	—	—	—	—	—	—	—	6	—	—	6
New Mexico																		
N. Mex. A. & M.	9	—	45	—	45	—	—	—	—	—	—	—	—	—	—	—	—	—
Univ. N. Mex.	12	—	324	—	324	—	—	—	—	—	—	—	—	—	18	—	18	—
New York																		
Alfred	3	—	19	—	19	—	—	—	—	—	—	—	—	—	2	—	2	—
City Col. of N. Y.	29	—	460	4	—	464	—	—	—	—	—	—	—	—	—	—	—	—
Clarkson	1	—	5	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—
Columbia	135	2	600	1	81	520	5	—	32	—	9	23	17	—	196	1	74	123
Cornell	43	—	124	2	126	—	—	—	—	—	—	—	17	—	60	—	60	—
N. Y. Univ.	133	—	920	4	283	641	—	—	—	—	—	—	3	—	141	—	—	141
Poly. Inst. Brooklyn	124	1	1,262	1	70	1,193	—	—	—	—	—	—	9	—	217	2	28	191
Pratt	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Rensselaer	57	—	688	6	160	534	—	—	—	—	—	—	10	—	54	—	32	22
Syracuse	29	—	582	1	143	440	—	—	—	—	—	—	7	—	48	—	26	22
Union Col.	2	—	50	1	—	51	—	—	—	—	—	—	—	—	—	—	—	—
Univ. Rochester	3	—	60	1	10	51	—	—	—	—	—	—	1	—	6	—	6	—
Webb	3	—	12	—	12	—	—	—	—	—	—	—	—	—	—	—	—	—

TABLE V—*Continued*

GRADUATE ENGINEERING ENROLLMENT AS OF OCTOBER 3, 1957, AND GRADUATE ENGINEERING DEGREES CONFERRED IN 1956–57, BY SCHOOL

North Carolina																		
N. C. St. Col.	38	—	123	1	124	—	9	—	7	—	7	—	7	—	20	1	21	—
North Dakota																		
N. Dak. Ag. Col.	7	—	23	—	23	—	—	—	—	—	—	—	—	—	—	—	—	—
Univ. N. Dak.	5	—	8	—	8	—	—	—	—	—	—	—	—	—	—	—	—	—
Ohio																		
A. F. Inst. Tech.	64	—	124	—	124	—	—	—	—	—	—	—	—	—	—	—	—	—
Case Inst.	48	—	435	1	436	—	—	—	—	—	—	—	—	—	—	—	—	—
Ohio St. Univ.	88	—	389	—	282	107	1	—	—	—	—	—	4	—	73	—	73	—
Univ. Akron	—	—	70	—	—	70	—	—	—	—	—	—	14	—	124	—	106	18
Univ. Cincinnati	3	—	370	3	38	335	—	—	—	—	—	—	—	—	—	—	—	—
Univ. Toledo	9	—	47	2	2	47	—	—	—	—	—	—	3	—	8	—	8	—
Oklahoma													—	—	—	—	—	—
Okla. St. U. of A. & A. S.	44	—	119	—	119	—	—	—	—	—	—	—	1	—	15	—	15	—
Univ. Okla.	45	—	107	—	107	—	—	—	—	—	—	—	—	—	—	—	—	—
Univ. Tulsa	15	—	45	—	18	27	—	—	—	—	—	—	—	—	—	—	—	—
Oregon													—	—	—	—	—	—
Oregon St. Col.	11	—	30	—	30	—	—	—	—	—	—	—	1	—	3	—	3	—
Pennsylvania																		
Bucknell	3	—	3	1	4	—	—	—	—	—	—	—	—	—	—	—	—	—
Carnegie	56	—	246	1	81	166	1	—	—	—	—	—	18	—	75	1	76	—
Drexel	47	—	479	—	479	—	—	—	—	—	—	—	—	—	—	—	—	—
Lafayette	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lehigh	44	—	171	—	171	—	—	—	—	—	—	—	—	—	—	—	—	—
Pa. St. Univ.	50	—	158	—	158	—	—	—	—	—	—	—	5	—	34	—	34	—
Univ. Pa.	71	—	880	2	134	748	—	—	—	—	—	—	12	—	92	—	92	—
Univ. Pittsburgh	52	—	475	—	90	385	—	—	—	—	—	—	7	—	156	—	156	—
Villanova	—	—	11	—	—	11	—	—	—	—	—	—	5	—	126	—	42	84
Rhode Island													—	—	—	—	—	—
Brown	6	—	37	—	30	7	—	—	—	—	—	—	1	—	10	1	11	—
Univ. R. I.	8	—	9	—	9	—	—	—	—	—	—	—	—	—	—	—	—	—
South Carolina																		
Clemson	4	—	21	—	21	—	—	—	—	—	—	—	—	—	—	—	—	—
Univ. S. C.	—	—	6	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—
South Dakota																		
S. Dak. Mines	—	—	15	—	15	—	—	—	—	—	—	—	—	—	—	—	—	—
S. Dak. St. Col. of A. & M. Arts	2	—	12	—	12	—	—	—	1	—	1	—	—	—	—	—	—	—
Tennessee																		
Univ. Tenn.	21	—	246	1	242	5	—	—	—	—	—	—	3	—	10	—	10	—
Vanderbilt	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Texas																		
Rice	5	—	32	—	32	—	—	—	—	—	—	—	2	—	2	—	2	—
Southern Meth.	32	—	1,069	6	6	1,069	—	—	—	—	—	—	—	—	—	—	—	—
Tex. A. & M.	49	—	82	—	82	—	—	—	—	—	—	—	2	—	19	—	19	—
Tex. Col. A. & I.	—	—	4	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—
Tex. Tech. Col.	1	—	4	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—
Univ. Houston	15	—	100	1	101	—	—	—	—	—	—	—	—	—	1	—	1	—
Univ. Tex.	68	—	147	—	147	—	—	—	—	—	—	—	7	—	49	—	49	—

TABLE V—*Continued*

GRADUATE ENGINEERING ENROLLMENT AS OF OCTOBER 3, 1957, AND GRADUATE ENGINEERING DEGREES CONFERRED IN 1956–57, BY SCHOOL

Institution	No. of Master's Degrees Conferred in Eng'g 1956–57		Number Enrolled in Work for the Master's Degree: Fall 1957				No. of Post-Grad. Pre-Doctoral Degrees[1] Conferred in Eng'g 1956–57		Number Enrolled in Work for Other Post-Graduate Pre-Doctoral Degrees:[1] Fall 1957				No. of Doctor's Degrees Conferred in Eng'g 1956–57		Number Enrolled in Work for the Doctor's Degree: Fall 1957			
			Total		Day Students, Full-Time and Part-Time	Evening and Special Students			Total		Day Students, Full-Time and Part-Time	Evening and Special Students			Total		Day Students, Full-Time and Part-Time	Evening and Special Students
	Men	Wo.	Men	Wo.			Men	Wo.	Men	Wo.			Men	Wo.	Men	Wo.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Utah																		
Univ. Utah	14	—	[2]70	—	[2]70	—	—	—	—	—	—	—	6	—	—	—	—	—
Utah St. U. of A. & A. S.	3	—	20	—	20	—	—	—	—	—	—	—	—	—	3	—	3	—
Virginia																		
Univ. Va.	9	—	238	—	29	209	—	—	—	—	—	—	—	—	7	—	7	—
Va. Poly.	24	—	139	—	139	—	—	—	—	—	—	—	4	—	11	—	11	—
Washington																		
Univ. Wash.	66	1	288	3	291	—	—	—	—	—	—	—	7	—	30	—	30	—
Wash. St. Col.	3	—	23	—	23	—	2	—	—	—	—	—	—	—	—	—	—	—
West Virginia																		
Univ. W. Va.	12	—	35	—	32	3	—	—	—	—	—	—	3	—	5	—	5	—
Wisconsin																		
Univ. Wisc.	97	—	258	1	259	—	2	—	—	—	—	—	22	—	93	1	94	—
Wyoming																		
Univ. Wyo.	2	—	26	—	26	—	—	—	—	—	—	—	—	—	—	—	—	—
Dist. of Columbia																		
Catholic Univ.	5	—	124	13	127	10	—	—	—	—	—	—	2	—	—	—	—	—
Geo. Wash. Univ.	18	—	452	—	—	452	—	—	—	—	—	—	—	—	—	—	—	—
Total ECPD schools	5,049	15	23,548	97	12,461	11,184	139	—	295	1	272	24	595	1	4,156	24	3,490	690

[1] Other engineering degrees requiring work beyond the master's degree, but less than the requirements for a doctor's degree.
[2] Includes students enrolled for pre-doctoral and doctor's degrees.

ASEE AUDIT REPORT
FOR THE YEAR ENDED JUNE 30, 1957

FILBEY, FILBEY & BEAGLE

Certified Public Accountants
Urbana, Illinois

Balance Sheet

June 30, 1957

CURRENT FUND

Assets

Cash:

Checking accounts	$10 313 33	
Savings accounts	75 627 72	$ 85 941 05
Petty cash		300 00
United States Government obligations, at cost, plus accrued interest of $8.75		36 708 75

Accounts receivable:

Advertising	$ 1 597 70	
Dues	1 000 00	
Teaching ads	696 00	
Westinghouse Educational Foundation	250 00	
Due from B. J. Lamme Fund	266 53	
Bendix Aviation Corporation	656 21	
McGraw-Hill Book Company	770 95	5 237 39

Unused advances:

ECRC Survey of Engineering Colleges' Research Capabilities	$31 374 36	
Survey of Technical Institute Education	2 534 12	33 908 48
Deposit for air travel card		425 00
Office supplies		210 00
Inventory		1 00
Furniture and equipment		1 00
Total Assets (See note at end of Liabilities and Surplus)		$162 732 67

Balance Sheet

June 30, 1957

CURRENT FUND

(Continued)

Liabilities and Surplus

Accounts payable and accrued expenses		$ 21 453 06
Amounts collected in advance:		
Dues	$ 7 277 30	
Proceedings	77 00	7 354 30
Excess of contributions over expenditures (Note):		
Evaluation of Engineering Education Follow-Up	3 461 82	
Humanistic-Social Research Follow-Up	1 098 17	
Educational Requirements for Engineers in the Nuclear Industry (expenditures exceeded contributions)	(723 81)	
Graduate Study Project	1 612 30	
Technical Institute Book	4 495 65	
Survey of Technical Institute Education	7 140 46	
ECRC Survey of Engineering Colleges' Research Capabilities	31 374 36	
ASEE–AEC Summer Institutes on Nuclear Energy	2 213 32	
Development of Engineering Faculties	1 416 18	
English in Engineering Curricula	296 28	
Recruiting Practices and Procedures (expenditure exceeded amount received)	(200 17)	52 184 56
Surplus:		
Reserve for special projects	$ 4 796 14	
Reserve for ECRC	5 302 27	
Reserve for emergencies	60 000 00	
Unappropriated surplus	11 642 34	81 740 75
Total Liabilities and Surplus (Note)		$162 732 67

Note: As of June 30, 1957 $52,184.56 of the total assets of $162,732.67 represent amounts received from outside organizations to be used for special projects. These amounts are not available for general Society operations.

Balance Sheet

June 30, 1957

B. J. LAMME FUND

Assets

Cash	$ 290 25
Income cash in hands of trustee	249 26
Principal cash in hands of trustee	5 51
Securities and mortgages	10 136 22
Total Assets	$10 681 24

Liabilities and Surplus

Due to current fund	$ 266 53
Surplus	10 414 71
Total Liabilities and Surplus	$10 681 24

Statement of Changes in Account Balances

For the Year Ended June 30, 1957

Current Funds

Educational Aids		
Balance, July 1, 1956		$ 978 95
Deduct:		
Amount transferred to reserve for special projects		978 95
Balance, June 30, 1957		$ 00 00
Evaluation of Engineering Education		
Balance, July 1, 1956		$ 7 667 16
Deduct:		
Expenditures		4 205 34
Balance, June 30, 1957		$ 3 461 82
Humanistic-Social Research Follow-Up		
Balance, July 1, 1956		$ 1 763 21
Deduct:		
Expenditures		665 04
Balance, June 30, 1957		$ 1 098 17
Educational Requirements for Engineers in the Nuclear Industry		
Balance, July 1, 1956 (expenditures exceeded contribution)		($ 1 682 16)
Add:		
Contribution		1 000 00
Total		($ 682 16)
Deduct:		
Expenditures		41 65
Balance, June 30, 1957 (expenditures exceeded contributions		($ 723 81)
Graduate Study Project		
Balance, July 1, 1956		$ 5 019 61
Deduct:		
Expenditures		3 407 31
Balance, June 30, 1957		$ 1 612 30
Technical Institute Book		
Balance, July 1, 1956 and June 30, 1957		$ 4 495 65
Survey of Technical Institute Education		
Balance, July 1, 1956		$37 518 87
Deduct:		
Expenditures		30 378 41
Balance, June 30, 1957		$ 7 140 46
ECRC Survey of Engineering Colleges' Research Capabilities		
Balance, July 1, 1956		$40 000 00
Deduct:		
Expenditures		8 625 64
Balance, June 30, 1957		$31 374 36
1956 Nuclear Energy Institute at Brookhaven National Laboratory		
Contribution		$25 000 00
Deduct:		
Expenditures	$22 617 57	
Refund to NSF	2 382 43	25 000 00
Balance, June 30, 1957		$ 00 00
1956 Nuclear Energy Institute at Argonne National Laboratory		
Contribution (supplementary grant)		$ 700 00
Deduct:		
Expenditures	$ 108 92	
Refund to NSF	591 08	700 00
Balance, June 30, 1957		$ 00 00

Statement of Changes in Account Balances

For the Year Ended June 30, 1957

(Continued)

ASEE–AEC 1957 Summer Institutes on Nuclear Energy		
Contribution		$ 4 050 00
Deduct:		
Expenditures		1 836 68
Balance, June 30, 1957		$ 2 213 32
Development of Engineering Faculties		
Amount transferred from reserve for special projects		$ 1 000 00
Contributions		11 517 00
Total		$12 517 00
Deduct:		
Expenditures		11 100 82
Balance, June 30, 1957		$ 1 416 18
English in Engineering Curricula		
Amount transferred from reserve for special projects		$ 500 00
Deduct:		
Expenditures		203 72
Balance, June 30, 1957		$ 296 28
Recruiting Practices and Procedures		
Amount received from sale of brochure		$ 274 83
Deduct:		
Expenditure		475 00
Balance, June 30, 1957 (expenditure exceeded amount received)		($ 200 17)
Reserve for Special Projects		
Balance, July 1, 1956		$ 5 317 19
Add:		
Amount transferred from Educational Aids project		978 95
Total		$ 6 296 14
Deduct:		
Amounts transferred to special projects:		
Development of Engineering Faculties	$ 1 000 00	
English in Engineering Curricula	500 00	1 500 00
Balance, June 30, 1957		$ 4 796 14
Reserve for ECRC		
Balance, July 1, 1956		$ 6 995 63
Add:		
Amount received from sale of ECRC publications		301 34
Total		$ 7 296 97
Deduct:		
Excess of expenditures over the budgeted amount		1 994 70
Balance, June 30, 1957		$ 5 302 27
Reserve for Emergencies		
Balance, July 1, 1956		$50 000 00
Add:		
Amount transferred from unappropriated surplus		10 000 00
Balance, June 30, 1957		$60 000 00

Statement of Changes in Account Balances

For the Year Ended June 30, 1957

(Continued)

Unappropriated Surplus	
Balance, July 1, 1956	$15 028 51
Add:	
Net income for the year ended June 30, 1957	6 613 83
Total	$21 642 34
Deduct:	
Amount transferred to reserve for emergencies	10 000 00
Balance, June 30, 1957	$11 642 34

B. J. Lamme Fund

Surplus	
Balance, July 1, 1956	$10 392 46
Add:	
Income	283 61
Total	$10 676 07
Deduct:	
Expense	261 36
Balance, June 30,1957	$10 414 71

Statement of Income and Expense

For the Year Ended June 30, 1957

Income	*Actual*	*Budget*	*Difference Favorable (Unfavorable)*
Individual dues	$54 126 73	$53 400 00	$ 726 73
Institutional dues	14 394 50	13 600 00	794 50
Advertising	18 787 45	18 000 00	787 45
Teaching ads	3 045 70	2 000 00	1 045 70
Interest	3 027 54	2 694 00	333 54
Subscriptions to Journal	2 676 77	2 353 00	323 77
Publications	1 670 48	654 00	1 016 48
Proceedings	545 20	300 00	245 20
Refund from annual meeting	533 08	—	533 08
Miscellaneous	2 68	50 00	(47 32)
Total Income	$98 810 13	$93 051 00	$5 759 13

Statement of Income and Expense

For the Year Ended June 30, 1957

(Continued)

	Actual	*Budget*	*Difference Favorable (Unfavorable)*
Total Income carried forward:	$98 810 13	$93 051 00	$5 759 13
Expense			
Annual Meeting	$ 3 060 90	$ 3 000 00	($ 60 90)
Journal and proceedings	37 372 66	34 000 00	(3 372 66)
Committees, conferences and divisions	1 251 51	2 000 00	748 49
Postage	1 778 71	1 300 00	(478 71)
Telephone and telegraph	945 77	1 100 00	154 23
Supplies and sundry printing	3 933 58	3 000 00	(933 58)
Travel expenses:			
Secretary's office	1 527 98	2 500 00	972 02
Officers	1 148 84	2 000 00	851 16
President	894 60	1 000 00	105 40
Editor	664 36	600 00	(64 36)
Council and policy committee	1 779 73	3 000 00	1 220 27
ECAC	1 036 94	1 500 00	463 06
ECRC	4 350 00	4 350 00	—
Salaries:			
Secretary	7 589 62	7 902 00	312 38
Editor	3 190 32	3 190 00	(32)
Office	13 732 75	13 380 00	(352 75)
Clerical assistance	297 82	936 00	638 18
Social security	380 53	350 00	(30 53)
Retirement of emeritus assistant secretary	1 360 00	1 360 00	—
Bonding fees and audit	600 00	500 00	(100 00)
American Council on Education subscriptions	310 00	310 00	—
ECPD contribution	680 00	$ 600 00	($ 80 00)
Contingencies and special projects	1 828 92	2 000 00	171 08
EJC dues	853 00	900 00	47 00
Utilities	336 42	575 00	238 58
Equipment	605 00	475 00	(130 00)
Maintenance of mechanical equipment	144 30	125 00	(19 30)
Liability and workmen's compensation insurance	492 06	—	(492 06)
Miscellaneous	49 98	75 00	25 02
Total Expense	$92 196 30	$92 028 00	($ 168 30)
Net Income	$ 6 613 83	$ 1 023 00	$5 590 83

Note: The statement of income and expense reflects the general Society operations. Contributions received and expenditures made in connection with the special propects listed in the balance sheet are not shown in this statement.

ASEE YEARBOOK

Organization of the Society

The Society for the Promotion of Engineering Education was the outgrowth of the meetings of Division E of the World's Engineering Congress held in Chicago from July 21 to August 15, 1893, in connection with the World's Columbian Exposition.

In June, 1946, the name of the Society was changed to The American Society for Engineering Education.

The purpose of the Society is the advancement of education in all its functions which pertain to engineering and allied branches of science and technology, including the processes of teaching and learning, research, extension services, and public relations. The Society shall serve its members as a common agency of stimulation and guidance in: (*a*) the formulation of the general goals and responsibilities of engineering education for the service of individuals and the advancement of general welfare; (*b*) the adjustment of curricula and educational processes to changing conditions; (*c*) the development of effective teachers and administrators; (*d*) the improvement of instructional materials and methods, of personnel practices, and of administrative usages; (*e*) the enhancement of professional ideals and standards; (*f*) the fostering of research as a function collateral to teaching; (*g*) the coordination of institutional aims and programs, both among schools and colleges and in their joint relations with professional, educational, and public bodies; and (*h*) the cultivation of a fraternal spirit among teachers, administrators, investigators, practitioners, and industrialists.

The Society is an organization of individual and institutional members which operates in two coordinate areas of activity, corresponding to the respective interests of these groups. The interests of the individual members are coordinated under a General Council, and the activities of its institutional members through the Engineering College Administrative Council and the Engineering College Research Council. The Executive Board is the administrative body responsible for coordinating the activities of the entire Society.

The ASEE has twenty-two Divisions and a number of Committees which represent various professional branches of science, engineering, and related fields. The Divisions and Committees arrange the technical program of the annual meeting and are responsible for much of the technical work of the Society. A number of studies of far-reaching importance to engineering colleges and the educational profession have been conducted through Division and Committee activities.

There are sixteen geographical Sections which hold regional meetings. The programs of these meetings are devoted to various timely subjects dealing with engineering education, research, administration, and professional aspects of engineering.

Local branches of the Society have been formed in a number of engineering colleges in order to further the objectives of engineering education within the colleges.

The Engineering College Administrative Council serves to foster cooperation among engineering colleges and to relate the colleges to the public welfare in the interests of the engineering profession, industry, and the public at large. It serves as an instrument of inquiry into problems which contribute to the effective administration of engineering colleges. It cooperates with agencies of the government, engineering societies, and other organizations to further the interests of engineering education. Membership in the Council is institutional, consisting of one voting member from each Active Institutional Member and one non-voting member from each Associate Institutional Member.

The Engineering College Research Council assists in developing research facilities in engineering colleges and serves as an organization to promote and coordinate scientific and industrial research. The Council cooperates with governmental agencies and industrial organizations in the formulation of research programs. Through these activities the Council contributes to the improvement of advanced study in engineering colleges.

The Journal of Engineering Education, published monthly during the academic year, is the formal publication of the ASEE. It contains papers, reports and discussions pertinent to the profession. This Journal is distributed free to the members. A bound volume of the Journal constitutes the annual Proceedings of the Society.

OFFICERS AND COUNCIL MEMBERS

Officers 1957-58

President: F. C. LINDVALL, Chairman of Engineering, California Institute of Technology, Pasadena, California.

Vice President, (1958) (sections–West): C. L. ECKEL, Dean of Engineering, University of Colorado, Boulder, Colorado.

Vice President, (1959) (sections–East): R. W. VAN HOUTEN, President, Newark College of Engineering, Newark, New Jersey.

Vice President, (1958) (instructional division activities): C. A. BROWN, Administrative Assistant, General Motors Institute, Flint, Michigan.

Vice President, (1959) (divisions–general): GLENN MURPHY, Head of Theoretical and Applied Mechanics, Iowa State College, Ames, Iowa.

Vice President, (1959) (Engineering College Administrative Council): R. A. MORGEN, Director, Purdue Research Foundation, Lafayette, Indiana.

Vice President, (1958) (Engineering College Research Council): R. J. WOODROW, Executive Officer and Secretary, Project Research and Inventions, Princeton University, Princeton, New Jersey.

Secretary: W. LEIGHTON COLLINS, Professor of Theoretical and Applied Mechanics, University of Illinois, Urbana, Illinois.

Treasurer: JOHN GAMMELL, Director of Graduate Training, Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin.

Editor: Journal of Engineering Education: E. C. MCCLINTOCK, JR., Director of Engineering Information and Publications, University of Illinois, Urbana, Illinois.

Junior Past Presidents:

W. L. EVERITT, University of Illinois, Urbana, Illinois.
M. M. BORING, General Electric Company, Schenectady, New York.
N. W. DOUGHERTY, University of Tennessee, Knoxville, Tennessee.

Secretary ECAC: HAROLD E. WESSMAN, Dean of Engineering, University of Washington, Seattle, Washington.

Secretary ECRC: RENATO CONTINI, College of Engineering, New York University, New York, New York.

Office Staff:

NAOMI GARMAN, Executive Office Secretary.
MARGARET HENDERSON, Editorial Secretary.
URSULA MOSES, Membership Secretary.
LOIS HUNT AND BONNIE EBBINGHAUS, Office Secretaries.

Members of General Council 1957-58

The General Council includes the Officers of the Society, the Junior Past Presidents listed on the preceding page and secretaries of ECAC and ECRC in addition to the following representatives of Divisions and Sections.

DIVISIONS

Representatives on Council *

Aeronautical Engineering—L. Z. Seltzer (1959), West Virginia University, Morgantown, West Virginia.

Agricultural Engineering—June Roberts (1958), Agricultural Engineering Department, State College of Washington, Pullman, Washington.

Architectural Engineering—L. A. Richardson (1958), Pennsylvania State University, University Park, Pennsylvania.

Chemical Engineering—J. O. Hougen (1959), Monsanto Chemical Company, St. Louis, Missouri.

Civil Engineering—R. L. Peurifoy (1958), A. & M. College of Texas, College Station, Texas.

Cooperative Engineering Education—E. K. Hamlen (1959), University of Akron, Akron, Ohio.

Educational Methods—E. K. Kraybill (1958), Duke University, Durham, North Carolina.

Electrical Engineering—Samuel Seely (1959), Case Institute of Technology, Cleveland, Ohio.

Engineering Drawing—F. A. Heacock (1958), Princeton University, Princeton, New Jersey.

Engineering Economy—A. Lesser, Jr. (1958), Stevens Institute of Technology, Hoboken, New Jersey.

English—J. H. Pitman (1958), Newark College of Engineering, Newark, New Jersey.

Evening Engineering Education—K. W. Riddle (1959), Drexel Institute of Technology, Philadelphia, Pennsylvania.

Graduate Studies—N. A. Christensen (1958), Cornell University, Ithaca, New York.

Humanistic-Social—Sterling P. Olmsted (1959), Rensselaer Polytechnic Institute, Troy, New York.

Industrial Engineering—Bert Norem (1958), Syracuse University, Syracuse, New York.

Mathematics—Haim Reingold (1959), Illinois Institute of Technology, Chicago, Illinois.

Mechanical Engineering—B. T. McMinn (1958), University of Washington, Seattle, Washington.

Mechanics—F. L. Singer (1959), New York University, New York 53, New York.

Mineral Engineering—C. O. Frush (1958), Colorado School of Mines, Golden, Colorado.

Physics—R. J. Seeger (1959), Assistant Director National Science Foundation, Washington, D. C.

Relations with Industry—J. F. Downie Smith (1959), Carrier Corporation, Syracuse, New York.

Technical Institute—K. O. Werwath (1959), Milwaukee School of Engineering, Milwaukee, Wisconsin.

SECTIONS

Representatives on Council *

Allegheny—Walton Forstall (1959), Carnegie Institute of Technology, Pittsburgh, Pa.

Illinois-Indiana—R. G. Owens (1958), Illinois Institute of Technology, Chicago, Ill.

Kansas-Nebraska—G. W. Bradshaw (1959), University of Kansas, Lawrence, Kansas.

Michigan—H. M. Hess (1958), Wayne State University, Detroit, Mich.

Middle Atlantic—Elmer C. Easton (1959), Rutgers University, New Brunswick, N. J.

Missouri-Arkansas—V. J. Blum, (1959), Saint Louis University, St. Louis, Mo.

National Capital Area—H. H. Armsby (1958), Department of Health, Education and Welfare, Washington, D. C.

New England—E. F. Littleton (1959), Tufts University, Medford, Mass.

North Midwest—A. B. Drought (1958), Marquette University, Milwaukee, Wis.

Ohio—E. C. Clark (1959), Ohio State University, Columbus, Ohio.

Pacific Northwest—R. D. Sloan (1958), State College of Washington, Pullman, Wash.

Pacific Southwest—D. E. Whelan, Jr. (1959), Loyola University of Los Angeles, Los Angeles, Calif.

Rocky Mountain—W. M. Richtmann (1958), Colorado School of Mines, Golden, Colo.

Southeastern—D. W. Dutton (1959), Georgia Institute of Technology, Atlanta, Ga.

Southwest—V. L. Doughtie (1958), University of Texas, Austin, Tex.

Upper New York-Ontario—R. M. Campbell (1958), Alfred University, Alfred, N. Y.

* Members of Council retire ten days after the Annual Meeting held in the year following their name.

ENGINEERING COLLEGE RESEARCH COUNCIL

The Engineering College Research Council is an outgrowth of the Engineering College Research Association. The Association was founded in 1942 and became the Engineering College Research Council on January 1, 1947, when it was merged with, and became one of the Councils of the American Society for Engineering Education. The original purposes of the Association are essentially the purposes of the Council.

These are set forth in Article VII, Section 1, of the Constitution of the American Society for Engineering Education, and essentially they shall be to assist in developing research facilities of engineering colleges, promoting research activities and disseminating research findings.

Membership in the Engineering College Research Council is institutional. Each institutional member, active or associate, is entitled to appoint one representative to the Engineering College Research Council, and representatives of those institutions which have associate membership shall have all the privileges of the representatives of the institutions which hold active membership, except the privilege of voting and holding office.

ECRC Officers 1957-58

R. J. Woodrow, *Chairman*, Princeton University, Princeton, N. J.
F. C. Lindvall, *Vice Chairman*, California Institute of Technology, Pasadena, California.
R. G. Folsom, *Vice Chairman*, University of Michigan, Ann Arbor, Mich.
Renato Contini, *Secretary*, New York University, University Heights, New York 53, N. Y.
Directors: H. W. Barlow (1958), Washington State College, Pullman, Wash.; T. J. Killian (1958), Office of Naval Research, Washington, D. C.; J. R. Cudworth (1959), University of Alabama, University, Ala.; J. D. Ryder (1959), Michigan State College, East Lansing, Mich.; C. A. Dunn (1960), Oklahoma Institute of Technology, Oklahoma State University, Stillwater, Okla.; C. C. Chambers (1960), University of Pennsylvania, Philadelphia, Pa.

ECRC Committees

Relations with Federal Government: H. R. Warfield, Chairman, Johns Hopkins University; Thomas E. Davis, The Ohio State University; F. L. Foster, Massachusetts Institute of Technology; George H. Lee, Rensselaer Polytechnic Institute; R. A. Morgen, Purdue Research Foundation; William E. Quinsey, The University of Michigan; R. J. Woodrow, Princeton University; H. K. Work, New York University; H. W. Barlow, Washington State College.

Relations with Industrial Agencies: C. A. Dunn, Chairman, Oklahoma State University; R. G. Folsom, University of Michigan; F. B. Foulk; G. W. Green, California Institute of Technology; D. S. Murray; M. A. Williamson, Pennsylvania State University; H. K. Work, New York University; C. G. Worthington, Industrial Research Institute, New York City.

Program: J. D. Ryder, Chairman, Michigan State University; C. C. Chambers, University of Pennsylvania; R. G. Folsom, University of Michigan; J. W. Hoffman, Michigan State University; J. H. Lampe, North Carolina State College.

Research Administration: H. W. Barlow, Chairman, Washington State College; C. C. Chambers, University of Pennsylvania; E. E. Litkenhous, Vanderbilt University; G. R. Town, Iowa State College; H. R. Warfield, Johns Hopkins University.

Curtis W. McGraw Award: J. R. Cudworth, Chairman, University of Alabama; B. G. Elliott, University of Wisconsin; T. J. Killian, Office of Naval Research, Washington, D. C.; E. E. Litkenhous, Vanderbilt University; W. J. Seeley, Duke University; H. K. Work, New York University.

Vincent Bendix Award: R. J. Martin, Chairman, University of Illinois; R. G. Folsom, University of Michigan; F. L. Foster, Massachusetts Institute of Technology; L. H. Johnson, Tulane University; F. C. Lindvall, California Institute of Technology; M. A. Williamson, The Pennsylvania State University.

Research Capabilities in Engineering Colleges: E. A. Walker, Chairman, Pennsylvania State University.

Advisory Committee: C. A. Dunn, Oklahoma State University; R. A. Morgen, Purdue Research Foundation; R. H. Ramsey (Project Director), Pennsylvania State University; R. J. Woodrow, Princeton University; H. K. Work, New York University.

Nominating Committee: H. K. Work, Chairman, New York University; E. A. Walker, Pennsylvania State University; E. C. Easton, Rutgers University.

Publications: R. Contini, Chairman, New York University; R. J. Woodrow, Princeton University; H. K. Work, New York University.

NSF AWARDS GRANTS FOR RESEARCH REACTORS

Two major grants for research reactors have been announced by the National Science Foundation. A $300,000 grant was made to the State College of Washington, at Pullman, and $150,000 was granted to the University of Virginia at Charlottesville. In each case, the government is supplementing funds provided by the university which cover more than half the cost of the reactor facilities.

A swimming-pool type, heterogeneous reactor will be constructed at the State College of Washington. It uses enriched fuel elements and is moderated by water. The reactor will have 12 beam ports, a thermal column, and a power level of 100 kilowatts to provide a core flux of about 10^{12} neutrons per cm.^{2} per second. This projected facility is near seven other institutions of higher learning and is expected to contribute to the development of a regional program in reactor research and training in nuclear technology.

The University of Virginia is constructing a similar reactor of the same type. Appreciable savings in cost have been effected by the participation of the University's School of Engineering in the design and construction of the reactor.

Nuclear fuel for both facilities will be provided by the U. S. Atomic Energy Commission.

ENGINEERING COLLEGE ADMINISTRATIVE COUNCIL

Membership in the Engineering College Administrative Council is institutional. Each institutional member, active or associate, is entitled to appoint one representative to the Engineering College Administrative Council. Representatives of those institutions which have associate membership shall have all the privileges of the representatives of the institutions which hold active membership except the privilege of voting and of holding office.

The purposes of the Engineering College Administrative Council are stated in the constitution of ASEE, Article VIII. These purposes can be summarized essentially as those problems which relate to administrative matters in the operation of engineering colleges and to disseminate information on those problems to the membership and the public.

ECAC Officers 1957-58

R. A. Morgen, *Chairman*, Purdue Research Foundation, Lafayette, Ind.
H. E. Wessman, *Secretary*, University of Washington, Seattle, Wash.
Executive Committee: E. C. Easton, Rutgers University, New Brunswick, N. J.; P. E. Hemke, Rensselaer Polytechnic, Troy, N. Y.; J. R. Van Pelt, Michigan College of Mining and Technology, Houghton, Mich.; A. T. Granger, University of Tennessee, Knoxville, Tenn.; R. H. Roy, Johns Hopkins University, Baltimore, Md.

ECAC Committees

International Relations: H. W. Bibber, Union College, Chairman; J. G. Young, University of Michigan, Vice Chairman; Harold Flinsch, University of South Carolina; H. F. Marco, South Dakota State College; W. L. Orr, University of California at Los Angeles; L. J. Parkinson, Colorado School of Mines; A. F. Spilhaus, University of Minnesota; Ernst Weber, Polytechnic Institute of Brooklyn; W. R. Weems, Massachusetts Institute of Technology.

Military Affairs: J. H. Lampe, North Carolina State College, Chairman; L. H. Johnson, Tulane University; Harold Torgersen, New York University; H. W. Barlow, Washington State Institute of Technology; G. B. Carson, Ohio State University; J. R. Cudworth, University of Alabama; H. O. Croft, University of Missouri; T. H. Evans, Colorado State University; A. S. Campbell, University of Maine.

Secondary Schools: J. F. D. Smith, Carrier Corporation, Chairman; D. L. Trautman, University of California at Los Angeles; W. E. Restemeyer, University of Cincinnati; B. C. Boulton, McDonnell Aircraft Corporation; R. C. Potter, Kansas State College; S. H. Pierce, University of Illinois; H. A. Romanowitz, University of Kentucky; B. C. Baker, Minnesota Mining & Manufacturing Co.; R. H. Carleton, National Science Teachers Association.

Selection and Guidance: A. R. Hellwarth, Detroit Edison Co., Chairman; D. S. Bridgman, American Telephone & Telegraph Co.; N. L. Freeman, Professional Engineers and Land Surveyors; E. D. Howe, University of California at Berkeley; D. L. Trautman, University of California at Los Angeles; J. W. Dean, Westinghouse Electric Co.; S. P. Shackleton, Bell Telephone Labs.; D. H. Moyer, Cornell University; H. P. Skamser, Michigan State University; M. E. Norton, General Electric Co.

(Ad Hoc) Committee to Study Accreditation by Individual States: E. C. Easton, Rutgers University, Chairman; W. L. Everitt, University of Illinois; G. A. Marston, University of Massachusetts.

Nominating Committee: W. T Alexander, Northeastern University, Chairman; W. L. Everitt, University of Illinois; J. H. Lampe, North Carolina State College.

Manpower Committee: D. L. Pyke, The Ramo-Wooldridge Corp., Chairman; Henry H. Armsby, Department of Health and Education and Welfare; M. M. Boring, General Electric Company; Donald S. Bridgman, American Telephone and Telegraph Company; Robert W. Cain, National Science Foundation; T. H. Chilton, E. I. DuPont de Nemours and Company, Inc.; Harold Goldstein, U. S. Department of Labor; George D. Lobingier, Westinghouse Electric Corporation; Donald C. Metz, University of Dayton; David R. Saunders, Educational Testing Service; Harold Torgersen, University of Connecticut; M. H. Trytten, Office of Scientific Personnel, National Academy of Sciences, National Research Council; Fred W. Trezise, University of Illinois, Navy Pier, Chicago.

SHORT COURSES ON MATERIALS SUMMER, 1958

Two specialized short courses in materials engineering will be offered at The Pennsylvania State University in the summer of 1958.

"Materials Engineering Design for High Temperature" will deal with the latest developments in rocket and guided missile research, as well as other high-temperature applications in aeronautics, nuclear energy, and petroleum and chemical engineering. The course will cover metallurgical properties, mechanical static properties at high temperatures, thermal shock and fatigue properties, and design. It will meet June 29 to July 3.

"Mechanical Properties of Materials—Their Determination, Interpretation, and Significance" is intended to bring design engineers and others engaged in materials research abreast of new developments in the field and will be held July 7 to 11. Hardness of metals, plastic behavior of metals under simple and combined stress, creep resistance and high-temperature properties of metals, fatigue strength of metals, radiation effects on metals, recent developments in testing machines and instrumentation, and metals under high-speed loading will be covered.

Lectures in both courses will be given by leading engineers and scientists in these fields. Further information can be obtained from Joseph Marin, Department of Engineering Mechanics, Pennsylvania State University, University Park.

SOCIETY COMMITTEES, 1957-1958

Annual Meeting: C. A. Brown, *Chairman*, General Motors Institute, Flint, Mich.; W. L. Collins, Walton Forstall, J. C. Gebhard, E. D. Howe, Glenn Murphy, M. P. O'Brien, W. I. Short, G. R. Henninger, L. M. Vallely, M. R. Baker.

Awards Policy: N. W. Dougherty, *Chairman*, University of Tennessee, Knoxville; W. T. Alexander, H. O. Croft.

Constitution and By-laws: K. F. Wendt, *Chairman*, University of Wisconsin, Madison; H. H. Armsby, H. O. Croft, L. K. Downing, L. E. Grinter, H. P. Rodes.

Curtis W. McGraw Research Award: J. R. Cudworth, Chairman, University of Alabama, University, Ala.; B. G. Elliott, T. J. Killian, E. E. Litkenhous, W. J. Seeley, H. K. Work.

Development of Engineering Faculties: H. L. Hazen, *Chairman*, Massachusetts Institute of Technology, Cambridge; J. C. Boyce, R. E. Bolz, G. B. Carson, W. L. Everitt, H. A. Foecke, M. D. Hooven, W. H. Miernyk, W. C. White.

Division Activities—General: Glenn Murphy, *Chairman*, Iowa State College, Ames; Committee members are chairmen and General Council Representatives of the following Divisions: Cooperative Engineering Education, Educational Methods, Evening Engineering Education, Graduate Studies, Relations with Industry, Technical Institute and Chairmen of the following Committees: Ethics, Graduate Study Project, Technical Institute Curricula (*ad hoc*), YET Summer Institute (*ad hoc*) and Young Engineering Teachers.

Division Activities—Instructional and Curricula: C. A. Brown, *Chairman*, General Motors Institute, Flint, Mich.; Committee members are Chairman and General Council Representatives of the following Divisions: Aeronautical, Agricultural, Architectural, Chemical, Civil, Electrical, Engineering Drawing, Engineering Economy, English, Humanistic-Social, Industrial, Mathematics, Mechanical, Mechanics, Mineral, Physics, and Chairmen of the following Committees: Engineering School Libraries, Nuclear Committee—Survey of Nuclear Manpower in Colleges and Universities, Survey of Teaching of English in Colleges of Engineering.

Engineering Research Capabilities of the United States Engineering Colleges: (See ECRC for committee personnel).

Engineering School Libraries: I. A. Tumbleson, *Chairman*, Newark College of Engineering, Newark, N. J.; R. E. Betts, J. A. Bonell, M. Chamberlain, D. M. Crosland, Madeleine Gibson, A. R. Krull, Pearl G. Lewis, E. C. McClintock, Jr., J. H. Moriarity, Mary F. Pinches, Jeanette Poor, Samuel Sass.

Ethics: W. W. Burton, *Chairman*, Minnesota Mining and Manufacturing Co., St. Paul, Minn.; F. T. Agthe, T. A. Boyle, C. Ebert, N. A. Christensen, J. D. Davis, R. A. Emerson, J. H. Foote, C. J. Freund, J. W. Graham, Jr., L. Helander, E. F. Obert, S. P. Olmsted, A. N. Paul, R. L. Peurifoy, L. E. Rich, W. F. Ryan, C. F. Savage, J. R. Snell, R. E. Swift, F. L. Cason.

Evaluation Report Follow-Up (*ad hoc*): Ernst Weber, *Chairman*, Polytechnic Institute of Brooklyn; C. S. Crouse, T. H. Evans, L. E. Grinter, H. L. Hazen, F. C. Lindvall, J. H. Rushton, B. R. Teare, Jr.

I. *Analysis and Design:* D. W. Ver Planck, *Chairman*, Carnegie Institute of Technology, Pittsburgh, Pa.; J. E. Arnold, E. E. Day, R. E. Fadum, M. S. Gjesdahl, D. L. Katz, D. H. Pletta, E. R. Schatz, Dana Young.

II. *Transfer and Rate Mechanisms:* R. R. White, *Chairman*, University of Michigan, Ann Arbor; L. N. Canjar, T. H. Evans, W. L. Everitt, R. G. Folsom, A. L. London, W. R. Marshall, J. H. Rushton, R. E. Treybal.

III. *Thermodynamics:* N. A. Hall, *Chairman*, Yale University, New Haven, Conn.; J. J. Martin, E. F. Obert, D. V. Ragone, F. D. Rossini, F. W. Sears, Myron Tribus.

IV. *Mechanics of Fluids:* V. L. Streeter, *Chairman*, University of Michigan, Ann Arbor; R. C. Binder, W. C. Nelson, H. Rouse, A. H. Shapiro, R. L. Sweigert, J. K. Vennard.

V. *Electrical Sciences:* T. L. Martin, *Chairman*, University of Arizona, Tucson; R. E. Beam, G. S. Brown, E. G. Smith, E. Weber, P. Weinberg.

VI. *Nature and Properties of Materials:* G. Murphy, *Chairman*, Iowa State College, Ames; R. M. King, B. J. Lazan, R. L. Sproull, T. E. Stelson, L. H. Van Vleck.

VII. *Mechanics of Solids:* P. F. Chenea, *Chairman*, Purdue University, Lafayette, Ind.; J. P. Den Hartog, D. C. Drucker, N. J. Hoff, J. Ormondroyd, R. Schuhmann, Jr., J. O. Smith, D. Young.

Financial Policy: M. M. Boring, *Chairman,* General Electric Co., Schenectady, N. Y.; W. L. Collins, John Gammell, W. C. White, E. R. Wilcox, W. R. Woolrich, T. Saville.

George Westinghouse Award: E. F. Obert, *Chairman,* Northwestern University, Evanston, Ill.; G. N. Cox, T. H. Evans, W. K. LeBold, E. J. Lindahl, G. A. Marston, R. S. Paffenbarger, R. W. Van Houten; G. D. Lobingier, *ex officio.*

Graduate Study Project (*ad hoc*): R. G. Folsom, *Chairman,* University of Michigan, Ann Arbor; T. H. Chilton, N. A. Christensen, N. A. Hall, H. L. Hazen, E. E. Litkenhous, E. Weber.

Steering Committee: N. A. Hall, *Chairman,* Yale University, New Haven, Conn.; N. A. Christensen, R. G. Folsom, H. L. Hazen, E. E. Litkenhous.

Honorary Membership: W. T. Alexander, *Chairman,* Northeastern University, Boston, Mass.; W. B. Boast, A. B. Bronwell, J. H. Davis, G. W. Farnham, J. A. Focht, A. T. Granger, L. E. Grinter, J. C. Reed, J. H. Rushton.

Ideal Registration Law (*ad hoc*): J. H. Sams, *Chairman,* Clemson College, Clemson, S. C.; G. F. Branigan, A. S. Janssen, K. F. Wendt.

Industrial Fellowship: K. B. McEachron, Jr., *Chairman,* Case Institute of Technology, Cleveland, Ohio; G. F. Branigan, J. R. Cudworth, P. E. Hemke, S. S. Kistler, W. A. Lewis, Jr., R. A. Morgen, M. H. Trytten, H. E. Wessman.

Industrial Membership: W. D. McIlvaine, Jr., *Chairman,* University of Michigan, Ann Arbor; F. E. Allen, B. C. Baker, Merl Baker, F. H. Berleth, B. B. Bright, W. L. Collins, H. W. Gouldthorpe, J. H. Howard, W. G. Ireson, G. D. Lobingier, C. W. Muhlenbruch, A. D. Preston, D. L. Pyke, John Avery, C. E. Schaffner, A. L. Townsend, W. R. Weems, E. L. Yates, John Avery, B. H. Amstead.

International Relations: (See ECAC for committee personnel).

James H. McGraw Technical Institute Award: L. V. Johnson (1958), *Chairman,* Southern Technical Institute, Chamblee, Ga.; C. L. Foster (1958), C. S. Jones (1960), R. W. Marsh (1960), D. C. Metz (1959), K. R. Miller (1959), E. W. Smith (1958), K. L. Holderman, *ex officio.*

Judging of the YET Paper Contest: Peter Balise, *Chairman,* University of Washington, Seattle; Margaret D. Blickle, W. H. Crater.

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J. R. Lorah,
B. L. Wellman,
H. H. Wheaton
C. O. Harris.

Terms of Office Expired in 1954

O. C. French,
W. W. Dornberger,
E. H. Gaylord,
H. R. Beatty,
E. Weber,
J. M. Apple,
H. Kuenzel,
C. L. Wilson,
E. F. Obert,
W. P. Godfrey,
K. F. Wendt,
E. R. Wilcox,
E. J. Lindahl,
N. F. Rode,
G. K. Palsgrove.

Terms of Office Expired in 1955

Glenn Murphy,
J. S. Walton,
H. C. Messinger,
H. E. Hartig,
C. A. Brown,
R. W. Van Houten,
J. W. Shirley,
H. K. Justice,
G. N. Cox,
G. P. Brewington,
C. D. Lobingier,
H. P. Rodes,
E. B. Stavely,
M. A. Durland,
T. Saville,
L. E. Stout,
G. A. Marston,
N. D. Thomas,
R. E. Vivian,
R. L. Sumwalt,
E. R. Wilcox.

Terms of Office Expired in 1956

R. H. Driftmier,
P. E. Soneson,
A. J. McNair,
E. B. Stavely,
R. S. Paffenbarger,
N. A. Christensen,
F. F. Groseclose,
E. E. Ambrosius,
W. J. Rundle,
N. A. Parker,
R. H. Schoonover,
H. H. Armsby,
Frank Kerekes,
M. L. Jackson,
A. Diefendorf,
M. R. Lohmann,
R. F. Eisenberg.

Terms of Office Expired in 1957

D. J. Peery,
K. Kobe,
J. G. Wohlford,
L. V. Bewley,
J. H. Pitman,
C. E. Schaffner,
D. Stillman,
R. S. Burington,
J. W. Howe,
R. J. Seeger,
A. R. Hellwarth,
C. S. Jones,
W. I. Short,
N. H. Barnard,
R. W. Van Houten,
G. F. Branigan,
E. T. Donovan,
H. K. Justice,
E. L. Grant,
H. Flinsch.

AWARDS AND RECIPIENTS

Lamme Medal

The Lamme Award consists of a gold medal and bronze replica bestowed annually upon a distinguished engineering educator for excellence in teaching and contributions to the art of teaching; contributions to research and technical literature; achievements which contribute to the advancement of the profession; and engineering administration. The Lamme trust fund was established in memory of Benjamin Garver Lamme.

Recipients of Lamme Medal

1928—George Fillmore Swain,* Professor of Civil Engineering, Harvard University.
1929—Irving Porter Church,* Emeritus Professor of Applied Mechanics and Hydraulics, Cornell University.
1930—Charles Felton Scott,* Professor of Electrical Engineering, Yale University.
1931—Dugald Caleb Jackson,* Professor of Electric Power Production and Distribution, in charge, Dept., Electrical Engineering, Massachusetts Institute of Technology.
1932—Arthur Newell Talbot,* Professor of Municipal and Sanitary Engineering, Emeritus, University of Illinois.
1933—Dexter Simpson Kimball,* Professor Emeritus of Industrial Engineering, Dean, College of Engineering, Cornell University.
1934—Edward Rose Maurer,* Professor of Mechanics, University of Wisconsin.
1935—William Elgin Wickenden,* President, Case School of Applied Science.
1936—Herman Schneider,* Dean, University of Cincinnati.
1937—Frederick Eugene Turneaure,* Dean, University of Wisconsin.
1938—Robert Lemuel Sackett,* Dean, Pennsylvania State University.
1939—Stephen P. Timoshenko, Professor of Theoretical and Applied Mechanics, Stanford University.
1940—Andrew A. Potter, Dean, Schools of Engineering, Purdue University.
1941—Anson Marston,* Dean Emeritus of Engineering, Iowa State College.
1942—Roy Andrew Seaton, Dean Emeritus, Division of Engineering, Kansas State College.
1943—Thomas Ewing French,* Professor of Engineering Drawing, Emeritus, The Ohio State University.
1944—Hardy Cross, Professor and Chairman, Dept. of Civil Engineering, Yale University.
1945—Harry Parker Hammond,* Dean Emeritus, School of Engineering, The Pennsylvania State University.
1946—Robert E. Doherty,* President, Carnegie Institute of Technology.
1947—Warren K. Lewis, Professor of Chemical Engineering, Massachusetts Institute of Technology.
1948—Alexander G. Christie, Professor Emeritus of Mechanical Engineering, Johns Hopkins University.
1949—Karl Taylor Compton,* President Emeritus, Chairman of Corporation, Massachusetts Institute of Technology.
1950—Fred B. Seely, Professor of Theoretical and Applied Mechanics, University of Illinois.
1951—Allan R. Cullimore,* President Emeritus, Newark College of Engineering.
1952—Solomon Cady Hollister, Dean of Engineering, Cornell University.
1953—Harry S. Rogers,* President, Polytechnic Institute of Brooklyn.
1954—Thorndike Saville, Dean of Engineering, New York University.
1955—Vannevar Bush, President, Carnegie Institution of Washington, D. C.
1956—L. M. K. Boelter, Dean of Engineering, University of California, Los Angeles.
1957—W. L. Everitt, Dean of Engineering, University of Illinois, Urbana.

* Deceased.

Vincent Bendix Award

The Vincent Bendix Award consists of a gold medal and citation conferred annually for outstanding research contributions, either in original thought or administrative leadership, to a staff member of the colleges of engineering in the United States. The Award was established through the efforts of the Engineering College Research Council. The Bendix Aviation Corporation granted funds to establish the Award in 1956.

Recipients of the Bendix Award

1956—Clifford C. Furnas, Chancellor, University of Buffalo.
1957—Theodore von Kármán, Director Emeritus, Guggenheim Aeronautics Laboratory, California Institute of Technology.

George Westinghouse Award

The George Westinghouse Award was established by the Westinghouse Educational Foundation in 1946 as an annual Award to young engineering teachers of outstanding ability to recognize and encourage their contributions to the improvement of teaching methods for engineering students.

Recipients of the George Westinghouse Award

1946—James Norman Goodier, Professor of Mechanics, Cornell University.
1947—Benjamin R. Teare, Jr., Buhl Professor and Head, Dept. of Electrical Engineering, Carnegie Institute of Technology.
1948—Hunter Rouse, Professor and Director, Institute of Hydraulic Research, State University of Iowa.
1949—Joseph Marin, Professor of Engineering Mechanics, Pennsylvania State University.
1950—Rolf Eliassen, Professor of Sanitary Engineering, Massachusetts Institute of Technology.
1951—Glenn Murphy, Professor of Theoretical and Applied Mechanics, Iowa State College.
1952—Gordon S. Brown, Professor and Head of Electrical Engineering, Massachusetts Institute of Technology.
1953—Edward F. Obert, Professor of Mechanical Engineering, Northwestern University.
1954—Thomas J. Higgins, Professor of Electrical Engineering, University of Wisconsin.
1955—Robert Roy White, Professor of Chemical Engineering, University of Michigan.
1956—Milton C. Shaw, Professor of Mechanical Engineering, Massachusetts Institute of Technology.
1957—Robert E. Treybal, Professor of Chemical Engineering, New York University.

Curtis W. McGraw Research Award

The Curtis W. McGraw Research Award has been established to recognize outstanding college research workers under forty years of age, and to encourage the continuance of their productivity in the future. It is hoped also that such a prize will stimulate interest in engineering college research as an essential area of engineering education. Sponsored by the Engineering College Research Council, with the assistance of the McGraw-Hill Book Company, the prize is named in honor of Curtis W. McGraw, whose efforts consistently furthered the cause of research through the publication and dissemination of research results. The prize is one thousand dollars in cash and an accompanying engraved certificate. Candidates must have been active in one or more types of research ordinarily carried on by colleges of engineering or institutes of technology, must have achieved important advances which have been accepted by colleagues and by other workers in the field of specialization, must have reputations for sound and productive thinking, and must give promise

of making further significant contributions. Evidence would include discoveries and other original work with engineering fundamentals, the conception or improvement of laboratory techniques or devices, publication of books, monographs, or scholarly papers, and activities in scholarly or professional societies. Preliminary nomination forms and supporting data sheets must be in the hands of the award committee chairman by March 1 of each year; the award is presented at the Annual Meeting in June.

Recipient of the Curtis W. McGraw Research Award

1957—GEORGE GERARD, Assistant Director, New York University, College of Engineering Research Division.

James H. McGraw Award

The James H. McGraw Award in Technical Institute Education is awarded annually for the purpose of recognizing and encouraging outstanding contributions to technical institute education. The Award consists of the sum of $500.00 and an engraved certificate provided by the McGraw-Hill Book Company in memory of James H. McGraw, Sr. Nominees are expected to have displayed unusual competence in one or more of the following activities related to technical institute education: instruction, publication, administration, and other appropriate contributions.

Recipients of the James H. McGraw Award

1950—HARRY P. HAMMOND,* Dean of Engineering, Pennsylvania State College.
1951—ROBERT HOOVER SPAHR, Administrative Chairman, General Motors Institute.
1952—ARTHUR LYMAN WILLISTON,* Principal (retired), Wentworth Institute.
1953—CHARLES W. BEESE, Director, Technical Extension Division, Purdue University.
1954—ARTHUR C. HARPER, President Emeritus, Wyomissing Polytechnic Institute.
1955—FREDERICK E. DOBBS, Principal (Retired), Wentworth Institute.
1956—CHARLES S. JONES, President, Academy of Aeronautics.
1957—ARTHUR L. TOWNSEND, Director, Lowell Institute School.

YET Paper Contest Winners

1953 First—E. L. HARRISBURGER, North Carolina State College.
Second—R. J. SMITH, Marquette University.
1954 First—W. E. SNYDER, General Motors Corporation.
Second—R. B. DAVIS, University of New Hampshire.
1955 First—H. A. FOECKE, Notre Dame University.
Second—D. R. LAMB, University of Wyoming.
1956 First—JAMES T. MILLER, University of Kentucky.
Second—ROBERT D. LA RUE, Colorado A & M College.
1957 First—ROBERT A. JANKE, Michigan College of M. & T.
Second—THOMAS H. ROCKWELL, Ohio State University.

* Deceased.

ANNUAL MEETINGS OF THE ASEE

Date	*Location*	*President of the Society*
1893, July 30–Aug. 5	Chicago, Ill.*	I. O. Baker, Univ. of Ill. (Chairman, Section E.)
1894, Aug. 20–21	Brooklyn Polytechnic Institute, Brooklyn, N. Y.	DeVolson Wood, Stevens Inst. of Technology.
1895, Sept. 2–4	Springfield, Mass.	G. F. Swain, Massachusetts Inst. of Technology.
1896, Aug. 20–22	Buffalo, N. Y.	Mansfield Merriman, Lehigh Univ.
1897, Aug. 16–18	University of Toronto, Toronto, Ontario.	H. T. Eddy, Univ. of Minn.
1898, Aug. 18–20	Boston, Mass.	J. B. Johnson, Wash. Univ., Missouri.
1899, Aug. 17–19	The Ohio State University, Columbus, O.	T. C. Mendenhall, Worcester Polytechnic Inst.
1900, July 2–3	Columbia University, New York City.	I. O. Baker, Univ. of Ill.
1901, June 29–July 2	Buffalo, N. Y.	F. O. Marvin, Univ. of Kans.
1902, June 27–28	Pittsburgh, Pa.	Robert Fletcher, Dartmouth College.
1903, July 1–3	Niagara Falls, N. Y.	C. M. Woodward, Wash. Univ., St. Louis.
1904, Sept. 1–3	St. Louis, Mo.	C. F. Allen, Mass. Inst. of Technology.
1905, June 28–29	Atlantic City, N. J.	F. W. McNair, Mich. Coll. of Mines.
1906, July 2–3	Cornell University, Ithaca, N. Y.	C. L. Crandall, Cornell Univ.
1907, July 1–3	Case School of Applied Science, Cleveland, O.	D. C. Jackson, M. I. T.
1908, June 24–27	Detroit, Mich.	Chas. S. Howe, Case School of Applied Science.
1909, June 24–26	Columbia University, New York City.	F. E. Turneaure, Univ. of Wis.
1910, June 23–25	University of Wisconsin, Madison, Wis.	H. S. Munroe, Columbia Univ.
1911, June 27–29	Carnegie Institute of Technology and the University of Pittsburgh, Pittsburgh, Pa.	A. N. Talbot, Univ. of Ill.
1912, June 26–29	M. I. T., Harvard and Wentworth, Boston, Mass.	W. G. Raymond, Univ. of Iowa.
1913, June 24–26	University of Minnesota, Minneapolis, Minn.	W. T. Magruder, Ohio State Univ.
1914, June 23–26	Princeton University, Princeton, N. J.	G. C. Anthony, Tufts College, Mass.
1915, June 22–25	Iowa State College, Ames, Ia.	Anson Marston, Iowa State College.
1916, June 19–22	University of Virginia, University, Va.	H. S. Jacoby, Cornell Univ.
1917, July 6–7	Washington, D. C.	G. R. Chatburn, Univ. of Neb.
1918, June 26–29	Northwestern University, Evanston, Ill.	M. S. Ketchum, Univ. of Colo.
1918, December 6–7 †	Cambridge, Mass.	J. F. Hayford, Northwestern University.
1919, June 25–28	Johns Hopkins University, Baltimore, Md.	J. F. Hayford, Northwestern University.
1920, June 29–July 2	University of Michigan, Ann Arbor, Mich.	A. M. Greene, Jr., Rensselaer Polytechnic Inst.
1921, June 28–July 1	Yale University, New Haven, Conn.	M. E. Cooley, Univ. of Mich.
1922, June 20–23	University of Illinois, Urbana, Ill.	C. F. Scott, Sheffield Sci. School of Yale Univ.
1923, June 20–23	Cornell University, Ithaca, N. Y.	C. F. Scott, Sheffield Sci. School of Yale Univ.
1924, June 25–28	University of Colorado, Boulder, Colo.	P. F. Walker, Univ. of Kans.
1925, June 16–20	Union College, Schenectady, N. Y.	A. A. Potter, Purdue Univ.
1926, June 16–18	State University of Iowa, Iowa City, Ia.	G. B. Pegram, Columbia Univ.
1927, June 27–30	University of Maine, Orono, Maine.	O. M. Leland, Univ. of Minn.
1928, June 26–29	University of North Carolina, Chapel Hill, N. C.	R. L. Sackett, Penna. State College.

* Meeting of Section E, Engineering Education, of the World's Engineering Congress, at which the S. P. E. E. was organized.

† Joint Meeting with the British Educational Mission to the United States. The meeting was called at the request of the Committee on International Relations of the American Council on Education.

1929, June 19–21	The Ohio State University, Columbus, Ohio.	Dexter S. Kimball, Cornell University.
1930, June 26–28	Ecole Polytechnique, McGill University, Montreal, Canada.	R. I. Rees, American T. & T. Co.
1931, June 17–19	Purdue University, Lafayette, Ind.	H. S. Boardman, University of Maine.
1932, June 29, 30–July 1	Oregon State College, Corvallis, Ore.	H. S. Evans, University of Colorado.
1933, June 27–30	Stevens Hotel, Chicago, Ill.	R. A. Seaton, Kansas State College.
1934, June 19–23	Cornell University, Ithaca N. Y.	W. E. Wickenden, Case School of Applied Science.
1935, June 24–27	Georgia School of Technology, Atlanta, Ga.	C. C. Williams, State University of Iowa.
1936, June 23–26	University of Wisconsin, Madison, Wis.	D. S. Anderson, Tulane University.
1937, June 28–July 2 ...	Massachusetts Institute of Technology and Harvard University, Cambridge, Mass.	H. P. Hammond, Polytechnic Institute of Brooklyn.
1938, June 27–30	A. & M. College of Texas College Station, Texas.	S. B. Earle, Clemson College.
1939, June 19–23	Pennsylvania State College, State College, Pa.	K. T. Compton, Mass. Inst. of Tech.
1940, June 24–28	University of California, Berkeley, Calif.	O. J. Ferguson, University of Nebraska.
1941, June 27–30	University of Michigan, Ann Arbor, Mich.	D. B. Prentice, Rose Polytechnic Institute.
1942, June 29–July 2 ...	New York City.	A. H. White, University of Michigan.
1943, June 18–20	Illinois Institute of Technology, Chicago, and Northwestern University, Evanston, Ill.	H. T. Heald, Illinois Institute of Technology.
1944, June 25–28	University of Cincinnati, Cincinnati, Ohio	Robert E. Doherty, Carnegie Institute of Technology.
*1945, June 21–24	Washington University, St. Louis, Mo.	H. S. Rogers, Polytechnic Institute of Brooklyn.
1946, June 20–23	Washington University, St. Louis, Mo.	H. S. Rogers, Polytechnic Institute of Brooklyn.
1947, June 18–21	University of Minnesota, Minneapolis, Minn.	Huber O. Croft, University of Iowa.
1948, June 14–18	University of Texas, Austin, Texas.	C. E. MacQuigg, Ohio State University.
1949, June 20–24	Rensselaer Polytechnic Institute, Troy, N. Y.	C. J. Freund, University of Detroit.
1950, June 19–23	University of Washington, Seattle, Wash.	Thorndike Saville, New York University.
1951, June 25–29	Michigan State College, East Lansing, Michigan	F. M. Dawson, State University of Iowa.
1952, June 23–27	Dartmouth College, Hanover, N. H.	S. C. Hollister, Cornell University.
1953, June 23–26	University of Florida, Gainesville, Fla.	W. R. Woolrich, University of Texas.
1954, June 14–18	University of Illinois, Urbana, Ill.	L. E. Grinter, University of Florida
1955, June 20–24	Pennsylvania State University, State College, Pa.	N. W. Dougherty, University of Tennessee
1956, June 25–29	Iowa State College, Ames, Iowa	M. M. Boring, General Electric Co.
1957, June 17–21	Cornell University, Ithaca, N. Y.	W. L. Everitt, University of Illinois
1958, June 16–20	University of California, Berkeley, Calif.	F. C. Lindvall, California Institute of Technology

* Cancelled at request of War Committee on Conventions, Office of Defense Transportation.

ENGINEERING SUMMER SCHOOLS, 1927-1958

1927—Engineering Mechanics, Cornell University.
1927—Engineering Mechanics, University of Wisconsin.
1928—Electrical Engineering, University of Pittsburgh, and Westinghouse E. & M. Company.
1928—Physics, Massachusetts Institute of Technology.
1929—Mechanical Engineering, Purdue University.
1930—Civil Engineering, Yale University.
1930—Engineering Drawing and Descriptive Geometry, Carnegie Institute of Technology.
1931—Chemical Engineering, University of Michigan.
1931—Mathematics, University of Minnesota.
1932—Economics, Stevens Institute of Technology.
1932—English, The Ohio State University.
1933—Mining and Metallurgy, University of Wisconsin.
1933—Conference of Administrative Officers, University of Wisconsin.
1935—Engineering Drawing, University of Wisconsin.
1939—Chemical Engineering, The Pennsylvania State College.
1941—Mechanical Engineering, Purdue University.
1941—Conference for Teachers of English in Technical Schools, University of Michigan.
*1945—Engineering Drawing.
1946—Engineering Drawing, Washington University.
1947—Mechanical Engineering, Northwestern University.
1948—Chemical Engineering, University of Wisconsin.
1949—Mechanical Engineering, Rensselaer Polytechnic Institute.
1950—Mechanics, Iowa State College.
Humanistic-Social, University of Washington.
North Midwest Section, University of Minnesota.
Civil Engineering (Photogrammetry), University of Denver.
1951—Humanistic-Social, Michigan State College.
Engineering Drawing, Michigan State College.
Mechanical Engineering (Thermodynamics), Michigan State College.
1952—Electrical Engineering, Dartmouth College.
English, Dartmouth College.
Educational Methods, General Electric Co., Schenectady, N. Y.
1953—Industrial Engineering, University of Florida.
Educational Methods, General Electric Co., Schenectady, N. Y.
1954—Electrical Engineering, University of Illinois, Urbana, Ill.
Engineering Mechanics, University of Illinois, Urbana, Ill.
Mechanical Engineering, University of Illinois, Chicago, Ill.
Economics in Engineering, University of Illinois, Urbana, Ill.
Humanistic-Social Workshop, University of Illinois, Urbana, Ill.
Teaching Methods Seminar, General Electric Co., Schenectady, N. Y.
Instrumentation Education (Symposium held jointly with ISA), University of Illinois, Urbana, Ill.
Solid State Physics in Engineering Education (Summer Institute), University of Illinois and Carnegie Institute of Technology.
Nuclear Physics in Engineering Education (Summer Institute), Columbia University and Northwestern University.
1955—Chemical Engineering, Pennsylvania State University, State College, Pa.
English, Pennsylvania State University, State College, Pa.
Thermodynamics (Summer Institute), Pennsylvania State University, State College, Pa.
Electricity and Magnetism (Summer Institute), Pennsylvania State University, State College, Pa.
Engineering Mechanics (Summer Institute), Pennsylvania State University, State College, Pa.
1956—Civil Engineering (Construction), Iowa State College, Ames, Iowa.
Engineering Drawing, Iowa State College, Ames, Iowa.
Humanistic-Social, Iowa State College, Ames, Iowa.
Conference on Mathematics in Engineering (Summer Institute), University of Michigan, Ann Arbor, Michigan.
1957—Civil Engineering, National Surveying Teachers Conference, Camp Welch, Naches, Wash. (Washington State College, Summer Surveying Camp.)
1958—Civil Engineering (Construction), University of California, Berkeley.
Mechanics Division, University of California, Berkeley.
Educational Methods and Young Engineering Teachers, University of California, Berkeley.

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*Cancelled at request of War Committee on Conventions, Office of Defense Transportation.

CONSTITUTION AND BY-LAWS

(As Amended June, 1957)

American Society for Engineering Education

Article I—Name and Objects

Section 1. The name of this organization shall be the American Society for Engineering Education.

Section 2. The Society shall be a continuation of the Society for the Promotion of Engineering Education and its organization and purpose shall be expanded so as to include those of the Engineering College Research Association.

Section 3. The purpose of this Society shall be the advancement of education in all its functions which pertain to engineering and allied branches of science and technology, including the processes of teaching and learning, research, extension services, and public relations. The Society shall serve its members as a common agency of stimulation and guidance in: (*a*) the formulation of the general goals and responsibilities of engineering education for the service of individuals and the advancement of general welfare, (*b*) the adjustment of curricula and educational processes to changing conditions; (*c*) the development of effective teachers and administrators; (*d*) the improvement of instructional materials and methods, of personnel practices, and of administrative usages; (*e*) the enhancement of professional ideals and standards; (*f*) the fostering of research as a function collateral to teaching; (*g*) the coordination of institutional aims and programs, both among schools and colleges and in their joint relations with professional, educational, and public bodies; and (*h*) the cultivation of a fraternal spirit among teachers, administrators, investigators, practitioners, and industrialists.

Article II—Membership

Section 1. Membership in the Society shall be of two general classes, Individual and Institutional.

Section 2. Individual membership shall be of three classes, Active Life, and Honorary. It shall comprise those persons who occupy or have occupied responsible positions in engineering instruction, research, or practice, or other persons interested in engineering education.

Section 3. The name of each candidate for active individual membership shall be proposed in writing to the Secretary by two members of whom the candidate is personally known. The proposal shall state the qualifications on which it is based. An affirmative letter ballot of three-fourths of those members of the Executive Board whose votes reach the Secretary within one month from the time of sending out the name of the candidate shall elect.

Section 4. A member in good standing may become a life member, exempt from all future payments for dues, by a single payment of an amount equal to twenty times the annual dues for members. Such payments received by the Society shall be placed in a separate fund known as the Life Membership Fund. The interest earned on this fund shall be used as current income.

Section 5. An individual member who has been in good standing for twenty-five (25) years or more, who

has reached the age of sixty-five (65) years, and who has retired from active professional life, may, upon written request, be designated as a life member by vote of the General Council, and shall thereafter be exempt from payment of dues.

Section 6. Honorary members may be chosen from among those who have rendered eminent service to mankind in engineering education or other engineering fields. Nomination of such candidates may be made by any member of the Society to the Committee on Honorary Membership. The Committee on Honorary Membership will in turn recommend to the General Council candidates for honorary membership.

Election shall be by a favorable vote of at least three-fourths of the members of the General Council in a letter ballot to be taken by the secretary. Councilors not heard from within one month from the date of mailing the ballots will be counted in favor of the candidate.

Honorary members shall enjoy all the privileges of the Society, and shall not be required to pay any fees or dues.

Election to honorary membership shall be limited in any administrative year to not more than two candidates.

Section 7. Institutional members shall be of four classes: Active, Affiliate, Associate, and Industrial. Active members shall be institutions which are eligible to participate in either or both of the institutional membership Councils. Affiliate members shall be other educational institutions engaged in technical instruction which have one or more curricula accredited by Engineers' Council for Professional Development or which are accredited by a major regional educational association. Associate members shall be professional organizations of engineers and research institutions. Industrial members shall be industrial organizations which have a major interest in engineering education.

Section 8. Active member institutions shall be only those offering curricula leading to baccalaureate or higher degree in engineering and having one or more curricula accredited as such by Engineers' Council for Professional Development, or if not within its jurisdiction must have one or more engineering curricula whose standards as judged by a competent accrediting agency are not lower than those of that Council. In the absence of any such accrediting agency the Executive Board of the Society shall have the power to judge of the equivalence of standards.

Section 9. All institutions which meet the conditions described in section 8 shall be eligible to participate as voting members in the Engineering College Administrative Council. To be eligible for voting participation in the Engineering College Research Council it is further required that the institution's research organization or activity shall have existed for at least three (3) years and shall have expended for engineering research during the three (3) fiscal years next preceding the date of its admission to the Council not less than that sum prescribed in the bylaws of the Engineering College Research Council.

Section 10. An institution may be proposed for membership by an official representative of any member institution who is familiar with the work of the institution proposed; or application for admission may be made directly by a responsible officer of the institution concerned. In either case the proposal or application shall be made in writing, addressed to the Secretary of the Society, and shall indicate the grade of membership applied

for and the Council or Councils in which it wishes to participate.

Section 11. The Executive Board shall determine the eligibility of the applicant for institutional membership of any class in the Society. The Executive Board shall have the power to elect Affiliate, Associate, and Industrial members of the Society by letter ballot, but shall refer applications for Active membership to the Executive Committee of each of the Councils in which the applicant desires to participate, each such Executive Committee being empowered to admit the applicant to the Council which it represents. All elections shall require a two-thirds favorable vote of the ballots cast. Institutions thus elected to membership in either or both of the institutional Councils thereby become Active institutional members of the Society.

Article III—Organization

Section 1. The means to ends specified in Article I, section 3, shall include the establishment of subordinate units of organization as needed to serve local, regional, departmental, or functional interests, the holding of meetings, conferences, and special schools, the setting up of agencies for educational inquiry, research, or planning, and the publication of papers, reports, researches, communications, and other significant materials concerned with engineering education.

Section 2. The Society shall be an organization of individual and institutional members and shall operate in two coordinate areas of activity corresponding to the respective interests of these groups. Its general activities shall be administered by an Executive Board (see Article V). The activities of its individual members shall be conducted under a General Council (see Article VI) and the activities of its institutional members through an Engineering College Research Council (see Article VII), and an Engineering College Administrative Council (see Article VIII).

The individual members of the Society shall further be organized in groups to function as (a) sections in specified territories; (b) branches formed by members of single institutions and (c) divisions with important subjects of instruction, research, or activity related to engineering education, under provisions as hereinafter set forth.

Article IV—Officers

There shall be a President, who shall be the executive officer of the Society and who shall hold office for one year. There shall be six Vice Presidents, each to hold office for two years as follows: in connection with individual memberships, two Vice Presidents responsible for General and Regional Activities, one in the Eastern part of the United States and one in the Western part, as designated by the Executive Board, to be elected in alternate years: a Vice President for instructional Divisions and Committees and a Vice President for General Divisions and Committees to be elected in alternate years. In connection with institutional memberships, there shall be a Vice President for the Engineering College Research Council and a Vice President responsible for the Engineering College Administrative Council, to be elected in alternate years. There shall be a secretary, to be appointed annually by a committee consisting of the President and all Vice Presidents; and a Treasurer, to be elected annually. In case of vacancy in the office of the President, the senior Vice President for General and Regional Activities shall succeed. In case of a vacancy in the office of Vice President for General and Regional Activities, the senior

Vice President for Instructional Divisions shall succeed.

Article V—Executive Board

Section 1. The Executive Board of the Society shall consist of the President, the six Vice Presidents, the Secretary, and the Treasurer. Its function shall be to coordinate the activities of the Society. Its actions shall be final as to (a) approval of budgets, (b) authorization of publications, (c) conventions, (d) appointment of officers to fill emergency vacancies, (e) determination of eligibility of institutional members, and (f) actions of the Society in relation to other organizations. The Executive Board is responsible for the general supervision and control of all financial matters in which the name of the Society is used. In all other matters, however, the Executive Board is advisory to the General Council, the Engineering College Research Council, and the Engineering College Administrative Council of the Society.

Section 2. The procedure in (*d*) filling emergency vacancies shall be as follows: excepting the Secretary, whose appointment is otherwise provided herein, the Executive Board shall make the appointment on recommendation of the President; provided, however, that, in case of vacancy in the office of a Vice President associated with the institutional membership, the President shall transmit to the Executive Board the recommendation of the Executive Committee concerned. The term of emergency appointments shall be until a successor is regularly elected.

Section 3. In case of a national emergency during which it is impossible for the Society to hold a regular meeting, the Executive Board may take any action on behalf of the Society that it deems necessary and advisable; provided, however, that such action shall be reported to the Society at its first regular meeting thereafter.

Section 4. Each Council of the Society shall report all of its actions to the Executive Board and shall not take an action affecting the interests of another Council until such proposed action has been considered by the Executive Board; provided, however, that in cases where the time element is too critical to permit deliberation by the Executive Board, a Council may, on its own responsibility, take emergency action within its own domain, or if it so authorizes, its Executive Committee may take such action; or provided further that a Council, or its Executive Committee if so authorized, may take such action jointly with another Council where joint interests are involved.

Article VI—General Council

Section 1. The General Council of the Society shall consist of the President, who shall be chairman, the six Vice Presidents, the Secretary, the Treasurer, the three Junior Past Presidents, the secretaries of the Engineering College Research Council and the Engineering College Administrative Council, and a representative of every Division and Section elected by the in which one half of such representatives will be chosen each year.

Section 2. Any individual member of the Society shall be eligible for election as such a representative on the General Council.

Section 3. Incumbent elective officers and members of the Council shall continue in office for a period of ten (10) days after the date of the annual meeting or in the event that no annual meeting is held, until ten (10) days after their successors shall have been elected.

Section 4. The actions of the General Council shall be final on all matters concerning the General and Re-

gional Activities and the Instructional Divisions, excepting those herein delegated to the Executive Board.

Section 5. The General Council shall determine its own By-laws which shall conform to the Constitution and By-laws of the Society.

Article VII—Engineering College Research Council

Section 1. There shall be an Engineering College Research Council whose purpose shall be to assist in developing the research facilities of engineering colleges (*a*) to further advance study in colleges of engineering and to develop and coordinate industrial and scientific research; (*b*) to undertake research designed to promote engineering advancement and economic adjustment in industry, public works, public health, the conservation and development of natural resources, and similar activities; (*c*) to cooperate with other associations and government agencies in the prosecution and promotion of research and to collaborate with them to prevent duplication of effort and achieve maximum utilization, coordination, and development of engineering and scientific research facilities; and (*d*) to publish periodic research reports, studies, papers, and investigations of significant value to engineering colleges and cooperating agencies for research.

Section 2. Its membership shall consist of institutions complying with the By-laws of the Research Council. There shall be Active (voting) and Associate (non-voting) membership. Each membership shall be entitled to one or more representatives designated by the proper officer of each member institution. Each Active Institutional membership shall have but one vote. All Institutional memberships shall be admitted by the Research Council.

Section 3. There shall be an Executive Committee of, and constituted by, the Engineering College Research Council; provided, however, that the Vice President of the Society associated with this Council shall be Chairman of the Council; and the President, Treasurer, and Secretary of the Society shall be ex officio advisory members without vote; and its powers shall be those delegated to it by this Council.

Section 4. The Engineering College Research Council shall determine its own By-laws which shall conform to the Constitution and By-laws of the Society.

Article VIII—Engineering College Administrative Council

Section 1. There shall be an Engineering College Administrative Council whose purpose shall be (*a*) to relate the engineering colleges to public welfare by close cooperation with the agencies of the Government; (*b*) to bring about cooperation among engineering colleges in the interest of the engineering profession, industry, and the public at large; (*c*) to bring about cooperation between the engineering colleges of this country and those of other lands; (*d*) to cooperate with engineering societies, trade organizations, and commercial groups in the interest of engineering education; (*e*) to act as an instrument of inquiry into problems which contribute to effective administration of engineering colleges; (*f*) to make the public conscious of the value of engineering education as a preparation for service to society in a technologic civilization.

Section 2. Its membership shall include one duly appointed representative of each such Active Institutional Members and Associate Institutional Members (non-voting) as are admitted to the Engineering College Administrative Council.

Section 3. There shall be an Executive Committee of, and constituted by, the Engineering College Administrative Council; provided, however, that the Vice President of the Society associated with this Council shall be Chairman of the Council; and the President, Treasurer, and Secretary of the Society shall be ex officio advisory members without vote; and its powers shall be those delegated to it by this Council.

Section 4. The Engineering College Administrative Council shall determine its own By-laws which shall conform to the Constitution and By-laws of the Society.

Article IX—Sections, Branches, Divisions, and Committees

Section 1. A section of the Society may be formed by members of the Society in two or more institutions and for all members within a territory prescribed by the General Council. A Section may be formed by a temporary organization which shall become a duly authorized section of the Society upon the approval of the General Council. Sections may determine their own form of organization, but shall operate in conformity with the Constitution and the By-laws of the Society and shall make a report of their proceedings to the Secretary of the Society. Sections shall be self-sustaining.

Section 2. A Branch may be formed by members of the Society in any one or more institution(s) by a temporary organization, which shall become a duly authorized Branch of the Society upon approval by the Executive Board. Branches may determine their own form of organization, but shall operate in conformity with the Constitution and the By-laws of the Society and shall make a report of their proceedings to the Secretary of the Society. Branches shall be self-sustaining.

Branches may cooperate with, or be a part of, other organizations having the same general purposes as this Society. The general purpose of Branches is to extend the interest in, and the discussion of, questions relating to the teaching of engineering students and to bring to the Society at large, through its publications, the activities in all institutions that will be serviceable to the members of the Society.

Section 3. The General Council may establish Divisions of the Society in areas of instructional responsibility generally existing in engineering colleges, e.g., mathematics, electrical engineering, etc., and in fields of major interest within the Society not directly related to instruction.

Section 4. The Executive Board, the General Council, the Engineering College Research Council, and the Engineering College Administrative Council may establish committees in their respective domains as prescribed in the By-laws.

Article X—Election of Officers

Section 1. The President, Treasurer, and four Vice Presidents, who must be members of the Society, shall be elected by mail ballot of the individual membership. The President and Treasurer shall be elected annually. The two Vice Presidents for General and Regional Activities shall be elected in alternate years. The Vice President for Instructional Division and Committee Activities and the Vice President for General Divisions and Committees shall be elected in alternate years. The two Vice Presidents associated with institutional membership shall be elected at the annual meeting of the Society in alternate years for respective terms of two years by their respective councils.

Section 2. There shall be a Nominating Committee consisting of the three Junior Past Presidents, senior member to be chairman, and those General Council members elected by the Sections and Divisions whose terms expire in the year in which the annual meeting is held.

Section 3. By means of a form furnished at the beginning of each academic year, an opportunity shall be given to individual members of the Society to submit names of persons to be considered for nomination. These names, on the forms provided, shall be sent to the Secretary of the Society not less than thirty (30) days prior to the fall meeting of the General Council. The Secretary shall submit the suggested names to all members of the Nominating Committee. At the time of the fall meeting of the General Council the Nominating Committee shall select candidates whose names shall be made available to the entire membership in December or January. After the publication of the nominees proposed by the Nominating Committee, other nominations may be made by petition of 50 signatures of members of the Society in good standing. Each nominee must have indicated his willingness to serve if elected before his name can be placed on the ballot. In February or March ballots giving the names of all candidates will be provided. Ballots received by the Secretary by March 31 shall determine the election of the officers as of April 1. Their terms of office shall begin ten days after the date of the annual meeting.

Article XI—Dues

Section 1. There shall be no admission fee.

Section 2. The annual dues shall be as stated in the By-laws of the Society, and any change in the dues of individual membership shall be determined by letter ballot of such membership.

Section 3. A member elected prior to February 1 in any fiscal year shall pay the full dues of that year; if elected after February 1, he shall pay half the dues of that year.

Section 4. Dues are payable in advance at the beginning of each fiscal year and shall be considered in arrears if not paid by the end of the fiscal year for which they are assessed. Dues of new members are payable at the time of election and shall be considered in arrears if not paid by the end of the fiscal year within which they are elected.

Section 5. Members in arrears one year shall be retained on the roll of the Society. Members who are in arrears two years, and who have been duly notified by the secretary shall be dropped from the roll of the Society. Anyone who has been dropped from membership for non-payment of dues may renew his membership by applying in the usual way and paying the arrearage in dues for the year during which he received the JOURNAL OF ENGINEERING EDUCATION.

Section 6. Honorary members shall be exempt from payment of dues.

Article XII—Meetings

There shall be at least one annual meeting at such time and place as the Society at the preceding meeting, or the Executive Board, if the Society does not act, may determine. The Executive Board shall authorize the time and place of meetings held under the auspices of Divisions and Committees excepting those held at national conventions of the Society.

Article XIII—Publications

Section 1. The Executive Board shall authorize all official publications of the Society and shall also prescribe

the rights of the several grades of members in connection with these publications.

Section 2. Papers and discussions presented before Sectional, Branch, Divisional, and Annual meetings or submitted in contests in Section, Branches, Divisions, and the Society at large shall be the property of the Society and may be published as Society proceedings if authorized by the Publications Committee. The Secretary shall have authority to waive property rights of the Society or to grant permission to publish such papers and discussions elsewhere on condition that the Society receives proper credit.

Article XIV—Amendments

This constitution may be amended by a favorable vote of the individual members of the Society, the proposed amendment being approved if at least two-thirds of the ballots returned within thirty (30) days after they are mailed out are favorable; and provided further (*a*) that the proposed amendment has first been voted upon by each of the three Councils of the Society and (*b*) that the results of such votes be recorded in the notice sent out to the membership with the ballots.

BY-LAWS OF THE SOCIETY

First. The Executive Board shall arrange for the annual meeting and prepare a program for it.

Second. Each Vice President shall submit a proposed budget for the activities for which he is responsible, to the Executive Board through the Secretary, who shall incorporate it with the General Budget so that the total proposed budget may be submitted to the Executive Board before May 1.

Third. Disbursements from the funds of the Society shall be made by the Treasurer in accordance with the approved budget or a direct appropriation authorized by the Executive Board for a special purpose, and upon vouchers signed by the Secretary of the Society.

Fourth. Within the ceiling limits for dues hereby established, the dues of members may be adjusted annually by the General Council at the same Council Meeting at which the annual budget is considered. The dues shall be so adjusted within the ceiling limits hereby established that over a reasonable period of years the Society shall not incur a deficit that in the opinion of the General Council might endanger continuity of operations.

The ceiling on dues shall be $7.00 per year for those who have not reached their 36th birthday at the beginning of the fiscal year (July 1) and $10.00 per year for all other individual members. Except for the first year after the adoption of this By-law, the increase in dues approved at any one time shall not exceed $1.00 for individual members.

During the first year after adoption of this By-Law, the dues for individual members will be $6.00 for members who have not reached their 36th birthday by July 1, 1954, and $8.00 for all other members.

The annual dues of institutional members will be as follows:

1. Active Members
   a. Participating in both Institutional Councils, $50.00.
   b. Participating in only one Institutional Council, $35.00
2. Associate Members, $50.00
3. Industrial Members, $50.00
4. Affiliate Members, $25.00

Fifth. The fiscal year of the Society shall be July 1 to June 30.

Sixth. The Secretary of the Society shall be secretary of the Executive Board.

Seventh. Committees reporting to either Institutional Council shall be authorized by the Executive Committee concerned and be appointed by the Vice President concerned. Committees of Sections, Branches, or Divisions shall be authorized by the body concerned and be appointed by the chairman of the body concerned. The ASEE Awards Committees (both for specific Society prizes and for coordination of award activities), the Membership Committees, the Financial Policy Committee, the Publications Committee, the Public Relations Committee, the Annual Meeting Committee, and the Constitution and By-Laws Committee are appointed by the President and are responsible to the Executive Board. Other standing committees and committees for special projects authorized by the Executive Board and General Council shall be appointed by the President with staff responsibility designated to the appropriate Vice President.

Eighth. There shall be a Publication Committee consisting of the President, the junior Past President, the Editor (appointed by the Executive Board), the Chairman of the English Division (ex-officio), the Secretaries of Engineering College Administrative Council and Engineering College Research Council, and the Secretary of the Society, who shall be chairman. It shall be responsible to the Executive Board for the general administration of all official publications of the Society.

The Editor shall be in direct charge of the JOURNAL OF ENGINEERING EDUCATION. Publications authorized by the Engineering College Research Council and the Engineering College Administrative Council shall be edited and published in accordance with plans of procedure recommended by these respective Councils and approved by the Executive Board.

The selling price of all publications shall be determined by the Executive Board on recommendation of the Publications Committee.

All income from publications shall be classified as income of the Society applicable to the annual budget of the Society.

Ninth. The Awards Policy Committee is responsible for establishing and coordinating policy, including procedures for presentations, with respect to awards presented in the name of the society or a constituent part of the society.

Tenth. These By-laws, excepting as they relate to dues of individual members, may be amended by a two-thirds vote of the members present at any regular meeting of the Society, provided that all individual and institutional members have been notified of the proposed amendment by notices published in the JOURNAL at least thirty (30) days prior to the said regular meeting at which action is to be taken, and provided further that the proposed amendment has first been voted upon by the General Council and the results of such vote recorded in the notice sent out for the meeting at which the proposed amendment is to be acted upon.

The dues of individual members may be changed only by a majority vote received by letter ballot of individual members.

BY-LAWS

Engineering College Research Council

FORMERLY THE ENGINEERING COLLEGE RESEARCH ASSOCIATION

(As Amended, June, 1948)

I. NAME

The name of this organization shall be the Engineering College Research Council of the American Society for Engineering Education.

II. PURPOSES

The purposes of the Engineering College Research Council, as set forth in Article VIII (Section 1) of the Constitution of the American Society for Engineering Education, shall be to assist in developing research facilities of engineering colleges:

a). To further advanced study in colleges of engineering and to develop and coordinate industrial and scientific research;

b). To undertake research designed to promote engineering advancement and economic adjustment in industry, public works, public health, and conservation and development of natural resources, and similar activities;

c). To cooperate with other associations and government agencies in the prosecution and promotion of research and to collaborate with them to prevent duplication of effort and achieve maximum utilization, coordination, and development of engineering and scientific research facilities; and

d). To publish periodic reports, studies, papers, and investigations of significant value to engineering colleges and cooperating research agencies.

III. MEMBERSHIP

1. Active membership in the Engineering College Research Council shall be confined to institutions of higher education granting degrees in engineering, which normally require four or more years of academic study and which have one or more engineering curricula accredited by the Engineers' Council for Professional Development, or if not within its jurisdiction, must have one or more engineering curricula whose standards as judged by a competent accrediting agency are no lower than those of that Council, *provided* that the research organization or activity of the institution shall have existed for at least three (3) years and that the institution shall have expended for engineering research during the three fiscal years next preceding the date of its admission to the Council not less than ten thousand dollars ($10,000). The term "research" as used herein means original investigations including the discovery of new processes, devices, or materials and does not include routine testing. Membership may preferably be taken out by the institution in the name of its Engineering Experiment Station, Engineering Research Institute or Division, or Engineering College, School, or Department.

2. A member institution must maintain a high record of performance in engineering research to remain in good standing as an active member.

3. Associate membership shall be confined to libraries, associations, companies, or individuals having an interest in engineering research such as to warrant, in the opinion of the Executive Committee of the Council, affiliation with the Council. Associate members shall have no vote, but may otherwise participate in all of the activities of the Council.

4. An institution may be proposed for membership in the Engineering College Research Council by an official representative of any member institution who is familiar with the work of the institution proposed; or application for admission may be made directly by a responsible officer of the institution concerned.

5. Applications for membership in the Engineering College Research Council shall be addressed to the Secretary of the American Society for Engineering Education, who shall refer such applications to the Executive Committee of the Engineering College Research Council.

6. Membership shall be conferred by the Executive Committee of the Engineering College Research Council by a two-thirds vote of the members of the Committee, after the eligibility of the applicant for membership in the Council shall have been determined by the Executive Board of the American Society for Engineering Education.

7. Membership in the Engineering College Research Council may be cancelled by a three-fourths vote of the members of the Council present at a called meeting and upon the recommendation of the Executive Committee for such causes as (1) poor technical performance, (2) acts tending to bring the Council into disrepute.

8. The executive Committee of the Engineering College Research Council may cancel membership in the Council for non-payment of dues.

9. Each active member of the Engineering College Research Council shall be entitled to one vote. The vote for each institutional member shall be cast by the person authorized by the President of the Institution as its representative to the Council.

IV. Dues

Dues to be paid for membership in the Engineering College Research Council shall be as specified in the Constitution and By-laws of the American Society for Engineering Education and shall be payable to the Treasurer of that Society.

V. Officers

1. The officers of the Engineering College Research Council shall consist of a Chairman, two Vice-Chairmen, a Secretary, and six Directors. These officers, with the exception of the Secretary, shall constitute the voting members of the Executive Committee of the Council.

2. The President, Secretary, and Treasurer of the American Society for Engineering Education shall be ex-officio advisory members without vote of the Executive Committee of the Engineering College Research Council.

3. The Chairman and two Vice-Chairmen of the Engineering College Research Council shall be elected by the method provided in these By-laws for two (2) years. The Directors shall be elected by the method provided in these By-laws for terms of three (3) years. The Secretary shall be appointed by the Executive Committee.

4. The Chairman of the Engineering College Research Council shall perform the executive duties which usually devolve upon that office. He shall, by virtue of his office in the Engineering College Research Council, hold office as a Vice-President of the American Society for Engineering Education.

5. The Chairman of the Engineering College Research Council, with the advice of the Executive Committee, shall appoint such committees as are deemed necessary; except that he shall recommend to the President of the American Society for Engineering Education the personnel of the Engineering College Research Council Committee on Publications which shall constitute a Subcommittee of the Publication Committee of the American Society for Engineering Educaton, the personnel of which shall be approved by the Executive Board of the American Society for Engineering Education.

6. The Chairman of the Engineering College Research Council shall receive and account for all gifts of funds or property to the Council and shall approve all bills and vouchers for payment by the Treasurer of the American Society for Engineering Education to cover expenses of the Engineering College Research Council.

7. The functions and duties of the Executive Committee of the Engineering College Research Council shall be as follows:

a). The Executive Committee shall have charge of all matters relating to the expenditure of funds budgeted to the Engineering College Research Council by the Executive Board of the American Society for Engineering Education, the making of contracts, and the approval of bills.

b). The Executive Committee shall authorize all official publications of the Council as provided by Article VIII (Section 1) of the Constitution of the American Society for Engineering Education.

c). During intervals between meetings of the Engineering College Research Council, the Executive Committee shall formulate the general policies of the Council.

d). The Executive Committee shall, before May 1 of each year, prepare an Engineering College Research Council budget for the following fiscal year to be submitted to the Executive Board of the American Society for Engineering Education by the President of the Council.

e). The Executive Committee shall submit a report of its activities at each annual meeting of the Council.

f). A quorum of the Executive Committee for the transaction of business shall comprise five (5) of its voting members.

8. Any elected officer of the Engineering College Research Council may be re-elected to succeed himself for two (2) consecutive terms. Thereafter at least one term shall elapse before he is again eligible to hold the same office.

9. A member of the Executive Committee of the Engineering College Research Council may be elected to an office of the Coun-

cil other than the one he holds, but his former membership on the Committee shall cease and another person shall be elected at once to finish his unexpired term as a member of the Committee.

10. In case of vacancy of the office of Chairman, the Senior Vice-Chairman shall succeed to that office. Any vacancy in an office of the Executive Committee except that of the Chairman shall be filled by a special election for that purpose.

11. No elected officer may receive any salary from the Engineering College Research Council.

12. The term of newly-elected officers shall begin on July 1 following the annual election. In the case of special elections, the term of the newly elected officers shall begin ten (10) days after their election. Elected officers shall hold office until their successors shall have been elected and qualified.

VI. Elections

1. The Chairman of the Engineering College Research Council shall be elected biennially. One Vice-Chairman and two Directors shall be elected annually.

2. At each annual meeting the Executive Committee of the Engineering College Research Council shall elect by majority vote of those present a Nominating Committee of three (3) members to serve during the ensuing year. For regular annual elections of officers, the Nominating Committee shall nominate one or more members for each vacancy. A letter ballot containing these nominations with spaces provided for writing names of candidates other than those nominated shall be circulated to the members not less than sixty (60) days before the date of the annual meeting and shall be returnable to the Secretary of the Council not later than five (5) days before the date of the annual meeting. Election shall be by plurality vote for each office.

3. Special elections to fill vacancies in the membership of the Executive Committee shall be conducted by the method just described except that a nomination or nominations shall be made by the Nominating Committee within thirty (30) days after the vacancy occurs and the ballots shall be canvassed within thirty (30) days after the date of mailing ballot forms to members.

VII. Fiscal Year

The fiscal year of the Engineering College Research Council shall be from July 1 to June 30.

VIII. Meetings

1. A meeting for the transaction of the business of the Engineering College Research Council shall be held each year at approximately the same time and place as the annual meeting of the American Society for Engineering Education. The time and place of the annual meeting of the Council shall be announced to the membership of the Council not less than sixty (60) days before the date of the meeting.

2. Special meetings of the Engineering College Research Council may be called by the Executive Committee as needed upon thirty (30) days' notice to the membership of the Council.

3. Meetings of the Executive Committee of the Engineering College Research Council may be called by the Chairman as needed upon fifteen (15) days' notice to the membership of the Committee.

IX. Gifts

1. The Engineering College Research Council may accept gifts from individuals, firms, or associatons, from the Federal Government, or from State Governments, or their agencies, provided that such gifts are for the furtherance of the purposes of the Council.

2. Custody of funds or property received as gifts of the Engineering College Research Council shall be the responsibility of the Chairman of the Council.

3. The Engineering College Research Council may use, expend, or dispose of the funds or property received from gifts or from other sources in accord with the terms of the gifts or, as near as may be, in carrying out their general objects and purposes and may generally expend the funds in furtherance of the purposes of this organization as set forth in these By-laws and in Article VIII (Section 1) of the Constitution of the American Society for Engineering Education.

X. Amendments to By-Laws

These By-laws may be amended by a two-thirds vote of the members of the Engineering College Research Council canvassed by letter ballot. Proposed amendments shall be submitted in writing to the Secretary of the Council by petition signed by not fewer than ten (10) members of the Council. Proposed amendments shall be circulated by mail to the members of the Council and shall be voted upon by letter ballot, the vote to be canvassed by the Secretary not less than thirty (30) days following the circulation of the amendment.

BY-LAWS

Engineering College Administrative Council

(Adopted November, 1948)

I. Name

The name of this organization shall be the Engineering College Administrative Council of the American Society for Engineering Education.

II. Purposes

The purposes of the Engineering College Administrative Council, as set forth in Article III (Section 1) of the Constitution of The American Society for Engineering Education, shall be:

a). To relate the engineering colleges to public welfare by close cooperation with the agencies of the Government;

b). To bring about cooperation among engineering colleges in the interest of the engineering profession, industry, and the public at large;

c). To bring about cooperation between the engineering colleges of this country and those of other lands;

d). To cooperate with engineering societies, trade organizations, and commercial groups in the interest of engineering education;

e). To act as an instrument of inquiry into problems which contribute to effective administration of engineering colleges;

f). To make the public conscious of the value of engineering education as a preparation for service to society in a technologic civilization.

III. Membership

Membership in the Engineering College Administrative Council shall consist of one duly appointed representative of each such Active Institutional Members and Associate Institutional Members (non-voting) as are admitted to the Engineering College Administrative Council.

IV. Executive Committee

1. There shall be an Executive Committee of, and constituted by, the Engineering College Administrative Council; provided, however, that the Vice President of the Society associated with this Council shall be Chairman of the Council; and the President, Treasurer, and Secretary of the Society shall be ex-officio advisory members without vote; and its powers shall be those delegated to it by this council.

2. The Executive Committee shall consist of seven (7) elected members including its officers. These members shall be duly appointed representatives of Active Institutional members and shall constitute the voting members of the Executive Committee.

V. Officers

1. The officers of the Engineering College Administrative Council shall consist of a Chairman and a Secretary who shall perform the duties which usually devolve upon those officers.

2. The Chairman, the Secretary, and the remaining five (5) members of the Executive Committee shall be elected by the method provided in these By-Laws for terms of two (2) years, except that at the first election after adoption of these By-Laws two (2) members of the Executive Committee, other than the officers, shall be elected for one (1) year terms.

3. Any elected office of the Engineering College Administrative Council may be re-elected to succeed himself for two (2) consecutive terms; thereafter at least one (1) term shall elapse before he is again eligible to hold the same office.

4. In case of vacancy of the office of Chairman, that office shall be filled by a special election for that purpose to fill the unexpired term. In case of vacancy of the office of Secretary or a vacancy in the membership of the Executive Committee, the remaining members of the Executive Committee shall fill the vacancy for the unexpired term by a majority vote.

5. The term of newly-elected officers except those filling vacancies shall begin ten (10) days after the annual election. The terms of office of those elected to fill vacancies shall begin immediately after their election.

VI. Elections

The Chairman and Secretary of the Engineering College Administrative Council

and two (2) members thereof shall be elected biennially; with the exception noted in Article V, Section 2. The three (3) remaining members of the Executive Committee shall be elected in the alternate years.

2. Prior to each annual meeting of the Society, the Chairman of the Executive Committee of the Engineering College Administrative Council, with the approval of that Committee, shall appoint a Nominating Committee of three (3) members to serve for the elections during that annual meeting.

For regular annual elections of officers, the Nominating Committee shall nominate one or more members for each vacancy. A letter ballot containing these nominations, with spaces provided for writing names of candidates other than those nominated, shall be circulated to the members not less than sixty (60) days before the date of the annual meeting and shall be returnable to the Secretary of the Council not later than five (5) days before the date of the annual meeting. Elections shall be by plurality vote for each office.

Special elections to fill vacancies in the membership of the Executive Committee shall be conducted by the method just described except that a nomination or nominations shall be made by the Nominating Committee within thirty (30) days after the vacancy occurs and the ballots shall be canvassed within thirty (30) days after the date of mailing ballot forms to members.

VII. Fiscal Year

The fiscal year of the Engineering College Administrative Council shall be from July 1 to June 30.

VIII. Meetings

1. A meeting for the transaction of the business of the Engineering College Administrative Council shall be held each year at approximately the same time and place as the annual meeting of the American Society for Engineering Education. The time and place of the annual meeting of the Council shall be announced to the membership of the Council not less than sixty (60) days before the date of the meeting.

2. Special meetings of the Engineering College Administrative Council may be called by the Chairman of the Executive Committee as needed upon reasonable notice to the membership of the Council.

IX. Amendments to By-Laws

These By-Laws may be amended by a two-thirds vote of the members of the Engineering College Administrative Council present at any annual meeting. Amendments may be submitted by majority vote of the members of the Executive Committee of the Council, or by petition signed by not fewer than ten (10) members of the Council. Proposed amendments shall be circulated by mail to members of the Council not less than thirty (30) days prior to the annual meeting at which the amendments will be presented for adoption.

AAC STUDY OF GRADUATE PROGRAMS

A Guide to Graduate Study, recently published by the Association of American Colleges, is available at $5.00 from the American Council on Education, 1785 Massachusetts Avenue, N.W., Room 110, Washington 6, D. C. The volume is the first inclusive up-to-date book describing the programs leading to the Ph.D. degree in 135 colleges and universities in the United States. It covers such topics as admission requirements, fees and first-year aid programs, fields of study, residence requirements, and graduate school faculty and enrollment. It also attempts to answer many questions of interest to educational administrators, faculty members and graduate students.

THE ECPD DEFINITION OF ENGINEERING

The Recognition Committee of the Engineers' Council for Professional Development has been developing a definition of engineering. The Executive Committee of ECPD has requested that the most recent draft of the definition be submitted to the member societies so that any and all have the opportunity to comment on the definition. The definition and explanatory comments are given below. Please send your comments directly to Mr. G. H. O'Sullivan, Chairman of the Recognition Committee, ECPD, the J. G. White Engineering Corporation, 80 Broad Street, New York 4, New York. The Committee will undertake to compile all of the comments received and report back to ECPD as soon as possible.

> "Engineering is the Profession in which a knowledge of the mathematical and physical sciences gained by study, experience and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the progressive well-being of mankind."

The following comments may help in understanding the intent of the definition:

1. Engineering is defined as a Profession, thereby implying that it ranks with any of the other so-called learned groups in the community, such as medicine and law.

2. The idea of knowledge is included in the definition because it is felt that it is knowledge that distinguishes a profession, and that it is knowledge which the professional applies in the accomplishment of his objective.

3. The scope of the knowledge peculiar to engineering has been limited to the realms of the mathematical and physical sciences to distinguish from medical or psychological sciences, for example. The physical sciences include such items as chemistry, electronics, strength of materials, biology, etc.

4. Study, experience, and practice are enumerated because these are the items by which an engineer is judged and which he must, in fact, prove if he is to be accepted as a professional by any legal jurisdiction.

5. The idea of judgment is included in the definition in part to comply with the suggestions which a number of critics have offered, namely, that economics is a sufficiently important phase of engineering activity to justify its inclusion specifically in the definition. Whether or not a matter is economical is usually a matter of judgment. In addition, many engineering decisions are made in areas not subject to specific and accurate analysis.

6. The words from "to utilize . . ." are extended to convey, first, that economics is a primary consideration in all engineering, and second, that the engineer's tools are the resources of nature, and his aim to improve human welfare. Thus these words cover the objectives of the engineer as well as his mode of operation. The use of materials and forces which are new or not well known is not excluded.